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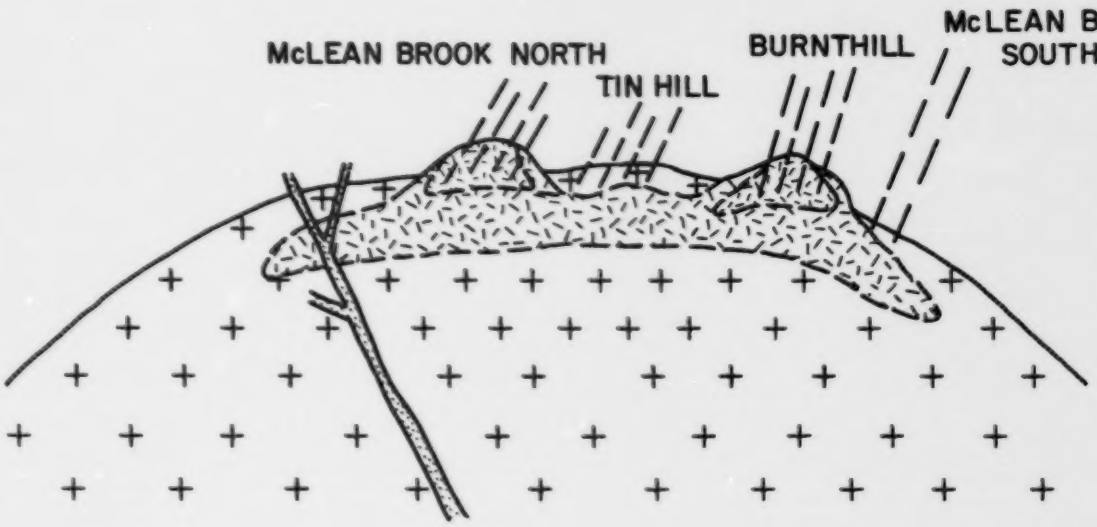
LITHOGEOCHEMISTRY (INCLUDING GOLD) OF ALTERED AND MINERALIZED SAMPLES FROM THE BURNTHILL BROOK AREA (NTS 21 J/10) OF CENTRAL NEW BRUNSWICK



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LITHOGEOCHEMISTRY (INCLUDING GOLD) OF ALTERED AND MINERALIZED SAMPLES FROM THE BURNTHILL BROOK AREA (NTS 21 J/10 and 21 J/15) OF CENTRAL NEW BRUNSWICK

ABSTRACT

Epizonal, tin-tungsten-bearing granites of Middle Devonian age comprise the Burnthill, Dungarvon, Rocky Brook, Sisters Brook, and Trout Lake plutons in the central Miramichi Highlands. Four texturally and mineralogically distinct units are present in each pluton: Unit 1 is a medium-grained, melanocratic, biotite granite; Unit 2 is a coarse- to medium-grained, seriate, biotite granite; Unit 3 is a fine- to medium-grained, equigranular, biotite granite; and Unit 4 comprises dykes of aplite and porphyritic microgranite, and veins or pods of pegmatite and granophyric granite.

Average whole-rock chemical compositions of unaltered granitic phases show a trend consistent with fractional crystallization. All plutons contain geochemical signatures that are typically associated with concentrations of lithophile elements; average background tin values ranging from 10 to 35 ppm (compared to 3 ppm for average granite) reflect the specialized nature of these plutons.

Significant mineral occurrences are generally associated with the equigranular granite (Unit 3), either within the granite or within sedimentary rocks in the exocontact zone. Endogranitic mineralization most commonly consists of cassiterite, and lesser amounts of wolframite and molybdenite within greisen-bordered quartz veins, greisen lenses, miarolitic cavities, or stockworks of quartz $\pm$ feldspar veins. Exogranitic mineralization typically occurs in quartz-vein swarms where wolframite is the most economically significant mineral (approaching economic grade at the Burnthill tungsten deposit) in association with cassiterite, scheelite, molybdenite, and/or base-metal sulphides.

Fifty-two samples of altered and mineralized granite and country rocks were analysed for 46 trace elements including gold and silver, and the rare-earth elements. Although exploration within and near these plutons has focused on its tin, tungsten, molybdenum, and to a certain extent, uranium potential, the lithogeochemical data also indicate a good potential for economic concentrations of precious metals in the Burnthill Brook area.

RÉSUMÉ

Des formations de granite épizonal contenant de l'étain et du tungstène, remontant au dévonien moyen, sont exposées dans les plutons de Burnthill, Dungarvon, Rocky Brook, Sisters Brook et Trout Lake, concentre des hautes-terres de la Miramichi. Chaque pluton comporte quatre unités différentes qui se distinguent par leur texture et leurs caractéristiques minéralogiques. L'unité 1 est constituée d'un granite biotite mélanocrate à grain moyen; l'unité 2, d'un granite biotite sérié à grain gros ou moyen; l'unité 3, d'un granite biotite isogranulaire à grain fin ou moyen; et l'unité 4 comprend des dykes intrusifs d'aplite et de microgranite porphyrique ainsi que des veines ou des masses minéralisées allongées de pegmatite et de granite granophyrique.

La composition chimique moyenne de l'ensemble de la masse rocheuse en phase granitique inaltérée démontre une tendance à la cristallisation fractionnée. Tous les plutons portent une signature géochimique habituellement associée aux concentrations d'éléments lithophiles ayant une

valeur commerciale. En effet, les quantités moyennes d'étain présentes dans le soubassement vont de 10 à 35 ppm (comparativement à 3 ppm pour un granite moyen), ce qui réflète le caractère spécial de ces plutons.

Les gisements minéraux importants sont généralement associés à un granite isogranulaire (unité 3). On les retrouve habituellement dans le granite comme tel ou dans la zone de contact externe de la roche sédimentaire hôte. La minéralisation endogranitique est le plus souvent constituée de cassitérite et de quantités moindres de wolframite et de molybdénite dans les veines de quartz enrobés de greisen, les masses lenticulaires de greisen, les cavités miarolithiques ou dans les réseaux de fissures minéralisées de quartz contenant plus ou moins de veines de feldspath. Habituellement, la minéralisation exogranitique survient dans les essaims de veines de quartz ou le wolframite est la substance minérale présentant le plus grand potentiel commercial (tout près d'une teneur exploitable au gisement de tungstène de Burnthill) qui soit associé au cassitérite, au scheelite, au molybdène, ou encore, aux sulfures métalliques.

Cinquante-deux échantillons de granite altéré et minéralisé et de roches encaissantes ont été analysés afin d'y déceler un ensemble de 46 métaux traces et éléments rares, y compris de l'or et de l'argent. Même si l'exploration dans et à proximité de ces plutons vise surtout à établir leur potentiel en étain, tungstène, molybdène et, jusqu'à un certain point, en uranium, les données lithogéochimiques recueillies indiquent également de bonnes possibilités d'y trouver des concentrations exploitables commercialement de métaux précieux dans la région de Burnthill.

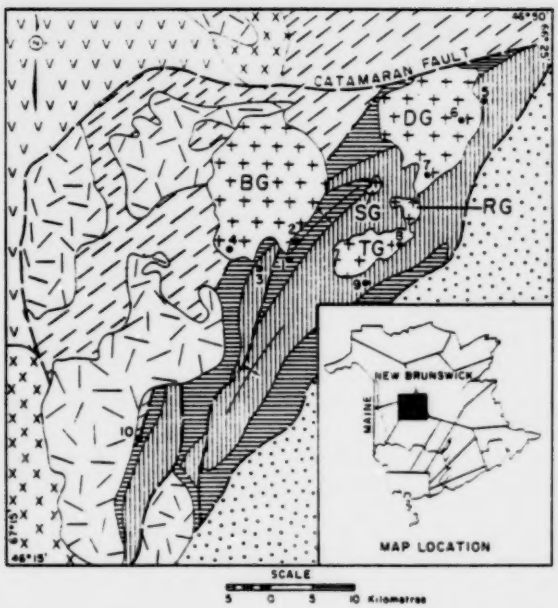
INTRODUCTION

Detailed geologic mapping of the tin-tungsten-bearing granites in the Burnthill Brook area (NTS 21 J/10 and part of NTS 21 J/15) was carried out in the summer of 1985 and 1986 (MacLellan 1985; Gardiner and Garnett 1986). Several hundred rock specimens were collected during this program. Of these, 52 altered samples were selected for geochemical analysis in order to evaluate the metallic mineral potential (including gold) of the area. These samples represent variously greisenized, feldspathized, and brecciated lithotypes within the granitic plutons as well as quartz veins and silicified stockworks from the plutons and their surrounding country rocks. Many of the samples were collected from known mineral occurrences (including several recent discoveries; Gardiner 1984a), and contain visible mineralization.

GEOLOGY

The Sn-W-bearing granites of the central Miramichi Highlands intrude greenschist-facies sedimentary and volcanic rocks of the Cambro-Ordovician Tetagouche Group and an amphibolite-facies regional metamorphic complex that is, at least in part, equivalent to lower grade rocks of the Tetagouche Group. These granites occur as a cluster of plutons (Burnthill, Dungarvon, Rocky Brook, Sisters Brook, and Trout Lake plutons) located in the Burnthill Brook area (Figure 1). The presence of miarolitic cavities and scarcity of pegmatites within the plutons attest to their high level of crustal emplacement.

The mineralized granites were intruded during the Middle Devonian as determined by argon dating techniques and, therefore, represent the youngest period of granitic magmatism in the Miramichi Highlands.



MIDDLE DEVONIAN

Post-tectonic granite

LATE SILURIAN - EARLY DEVONIAN

Syntectonic to late tectonic granite

Gabbro

LOWER DEVONIAN

TOBIQUE GROUP

Mafic and felsic volcanic rocks, conglomerate, sandstone and slate

SILURIAN

KINGSCLEAR GROUP

Lithic wacke and slate

CAMBRIAN-ORDOVICIAN

TETAGOUCHE GROUP

Pillow basalt, lithic wacke and slate, minor felsic volcanic rocks

Quartzose wacke and slate

METAMORPHIC COMPLEX

Paragneiss, biotite schist, amphibolite and metagranite

anticline

syncline

fault

MINERAL OCCURRENCES

1. Burnthill
2. Tin Hill
3. McLean Brook South
4. McLean Brook North
5. Peaked Mountain
6. Harris Lake
7. Little Dungarvon River (Main Dungarvon and Four Mile Brook)
8. Trout Lake East
9. Todd Mountain
10. Sisson Brook

FIGURE 1. Geologic setting of granites in the Burnthill Brook area. BG = Burnthill Granite, DG = Dungarvon Granite, RG = Rocky Brook Granite, TG = Trout Lake granite, and SG = Sisters Brook Granite.

The highly evolved chemical composition of these granites apparently reflects an origin as late-stage melts generated by crustal thickening associated with Acadian orogenesis.

Broad internal divisions within the Middle Devonian plutons of the Burnthill Brook area were recognized by Poole (1963), mapping on a 1:63 360 scale. Recently, more detailed mapping on a 1:20 000 scale has established that four units, based on differences in texture and mineralogy, are sufficient to characterize the main variations throughout the plutons. The divisions for the Burnthill pluton are shown on Plate 86-241A (modified from MacLellan 1986), for the Dungarvon and Sisters Brook plutons on Plate 87-55A (modified from Gardiner and Garnett 1987a), and for the Trout Lake and Rocky Brook plutons on Plate 87-57A (modified from Gardiner and Garnett 1987b).

A brief description of the four units is given below:

UNIT 1: Medium-grained, **melanocratic**, biotite granite occurs as small isolated bodies in the Burnthill, Dungarvon, and Trout Lake plutons. Sparse quartz and feldspar phenocrysts are ubiquitous and hornblende is present locally. The melanocratic granite is cross-cut by numerous veins of granite, resembling Unit 3 (see below), suggesting that Unit 1 represents remnants of an early intrusive pulse preserved in the roof zones of the magma chambers. Abundant fine-grained granite xenoliths, similar to Unit 1, are incorporated in the main granite phase along the contacts of the Rocky Brook pluton and in the Burnthill pluton to the southeast of the airfield near Deer Lake.

UNIT 2: Coarse- to medium-grained, **seriate** biotite granite, containing abundant feldspar phenocrysts up to 3 cm in length, constitutes a major portion of the Burnthill and Dungarvon plutons, but underlies less than half of the Trout Lake, Rocky Brook, and Sisters Brook plutons. The contacts between Units 2 and 3 are generally gradational, but locally are sharp. The sharp contacts are present in areas where Unit 3 presumably possessed a higher fluid content at the magmatic stage and would, therefore, have been more susceptible to remobilization (MacLellan et al. 1986).

UNIT 3: Medium- to fine-grained, **equigranular** biotite granite is the major constituent of the Trout Lake, Rocky Brook, and Sisters Brook plutons and forms much of the southern portions of the Burnthill and Dungarvon plutons. Contacts between the medium- and fine-grained (microgranitic) facies of this unit vary from gradational to sharp, reflecting local differences in degrees of remobilization.

UNIT 4: Dykes of porphyritic microgranite and aplite, and veins and pods of granophyric granite and pegmatite are present in all the above units, but are particularly abundant in Unit 2. The dykes of Unit 4 exhibit a wide range of field relations. Large dykes of biotite-rich porphyritic microgranite generally have sharp, unchilled cross-cutting contacts; pods and dykes of leucocratic porphyry, aplite, and granophyric granite have gradational contacts or are localized along joints. Although the dykes represent one of the last magmatic events, they probably do not represent a single episode of intrusion, and the larger biotite-rich bodies may have been tapped from deeper, more mafic levels of the pluton.

GRANITE-RELATED METALLIZATION

Mineral occurrences of economic interest in the Burnthill Brook area tend to be located within the equigranular granite (Unit 3), or within sedimentary rocks near the contact of the granite. This association suggests that the mineral-bearing fluids were derived from the equigranular facies (MacLellan et al. 1986). Presumably, volatiles that collected in the roof zone of the plutons delayed crystallization, resulting in the finer, even-grained texture observed in Unit 3. Subsequent fracturing of the magma chamber roof due to cooling and concurrent build-up of fluid pressure would then allow escape of the mineralizing solutions into the surrounding rocks.

Factors that govern styles of mineralization include original fluid composition, local physicochemical conditions, and mechanical properties of the host rocks. Brief descriptions of some occurrences are given below in order to illustrate the various styles of mineralization that are present. Their locations are shown on Figure 1; on Plates 86-241A, 87-55A, and 87-57A; and described in Appendices I, II, and III. The appendices summarize all occurrences that are listed in the New Brunswick Mineral Deposits File from the Burnthill Brook area.

Examples of sediment-hosted exogranitic quartz-vein swarms containing wolframite, cassiterite, and base metals are found at Burnthill tungsten (mineral occurrence 1, Figure 1), and at the Two and a Half Mile Brook and McLean Brook South showings (mineral occurrence 3, Figure 1) located to the south of the Burnthill pluton (Plate 86-241A; Appendix I), and at the Todd Mountain deposit (mineral occurrence 9, Figure 1; Plate 87-57A; Appendix III), occurring to the south of the Trout Lake granite. Scheelite and molybdenite are found in an exogranitic quartz-vein swarm hosted by gabbro and mafic volcanic rocks around Peaked Mountain (mineral occurrence 5, Figure 1; Plate 87-55A; Appendix II) on the eastern margin of the Dungarvon pluton.

Endogranitic mineralization generally occurs within cupolas and apophyses along the southern margin of the Burnthill pluton. Swarms of greisen-bordered veins containing cassiterite and wolframite cut a small granite cupola at the Tin Hill showing (mineral occurrence 2, Figure 1; Plate 86-241A; Appendix I). Similarly, exogranitic veins of the Burnthill tungsten deposit pass at depth into a buried cupola of fine-grained, equigranular granite. Cassiterite-bearing, greisenized granite occurs in an apophysis of fine-grained equigranular granite to the northwest of the Two and a Half Mile Brook showing (sample 85-BH-285A, Tables 4 and 9).

Styles of endogranitic mineralization evident within the Dungarvon pluton include: cassiterite as disseminations in quartz veins or as infillings of miarolitic cavities in feldspathized granite such as in the Little Dungarvon River area, and brecciated quartz-feldspar-cassiterite veins cutting feldspathized granite such as in the Four Mile Brook area (mineral occurrence 7, Figure 1; Plate 87-55A; Appendix II). Cassiterite and wolframite mineralization occur in endogranitic greisen lenses adjacent to and conformable with the southeastern contact of the Trout Lake granite (mineral occurrence 8, Figure 1; Plate 87-57A; Appendix III).

LITHOGEOCHEMISTRY

ANALYTICAL TECHNIQUES

Samples of unmineralized gran-

ites, collected during the mapping of the Burnthill Brook area in 1985 and 1986, have previously been analysed at Carleton University in Ottawa, Ontario. These samples were carefully selected to avoid the effects of deep weathering present throughout large parts of the region. The analytical methods used for these samples are given in Taylor et al. (1987). Average compositions for the Burnthill, Dungarvon, and Trout Lake plutons are presented in Tables 1, 2, and 3, respectively, for comparison with the altered and mineralized samples analysed during this study.

Although no systematic sampling of the mineral occurrences was carried out during the mapping project, grab samples were collected from many of them. Assay results from these altered and mineralized samples are not intended as a rigorous indication of their economic potential. A slabbed portion of each sample, polished to remove contamination from the saw blade, was submitted for analysis to X-Ray Laboratories in Don Mills, Ontario. The remaining portions of the samples are stored at the Fredericton office of the New Brunswick Department of Natural Resources and Energy.

The samples were analysed for the following major and minor oxides: SiO_2, Al_2O_3, CaO, MgO, Na_2O, K_2O, Fe_2O_3 (total), MnO, TiO_2, and P_2O_5; trace elements (in ppm except Au in ppb):

Li (lithium)	V (vanadium)
Be (beryllium)	Cr (chromium)
Rb (rubidium)	Mn (manganese)
Sr (strontium)	Co (cobalt)
Cs (cesium)	Zn (zinc)
Ba (barium)	Ga (gallium)
B (boron)	Mo (molybdenum)
S (sulphur)	Ag (silver)
Ge (germanium)	Cd (cadmium)
As (arsenic)	In (indium)
Se (selenium)	Sn (tin)
Sb (antimony)	W (tungsten)
Y (yttrium)	Au (gold)
Zr (zirconium)	Tl (thallium)
Nb (niobium)	Pb (lead)
Hf (hafnium)	Bi (bismuth)
Ta (tantalum)	

rare earths (in ppm):

La (lanthanum)	Dy (dysprosium)
Ce (cerium)	Er (erbium)
Nd (neodymium)	Lu (lutetium)
Sm (samarium)	Th (thorium)
Eu (europium)	U (uranium)
Gd (gadolinium)	

The analytical methods and detection limits for the various elements are given in Appendix IV. Sample descriptions are given in Tables 4, 5, and 6, where they are grouped according to the pluton in, or near, which they occur, and cross-referenced with the tables (Tables 7 through 18) in which the analytical results are found, to the plates (Plates 86-241A, 87-55A, and 87-57A) on which their locations are shown, and where appropriate, to the mineral occurrences listed in Appendices I, II, and III.

GRANITE COMPOSITIONS

The average chemical compositions of the unaltered granitic phases of the Burnthill, Dungarvon, and Trout Lake plutons are similar (Tables 1, 2, and 3). Overlap between the compositions of Units 2 and 3 reflects the gradational nature of the contacts between them. CaO, MgO, and TiO_2 contents are slightly higher (based on limited analyses available) in Unit 2 of the Dungarvon pluton compared to Unit 2 of the other plutons. Average background values for Sn vary from 10 to 35 ppm throughout the plutons compared to 3 ppm for an average granite (Krauskopf 1967). High Sn and F values are particularly common in Unit 1 and the fine-grained (microgranitic) facies of Unit 3, although the Trout Lake granite

appears to have elevated values in all of its phases.

The granite phases exhibit systematic decreases in TiO_2, Al_2O_3, MgO, CaO, P_2O_5, Ba, Sr, Zr, and V and increases in SiO_2 from Unit 1 through 4 (an analysis of the biotite-rich porphyritic microgranite on the western margin of the Burnthill pluton apparently represents an unfractionated late intrusive pulse similar in composition to Unit 2 and, therefore, was not included in the average of Unit 4). The changes noted above can be accounted for by crystal fractionation of plagioclase, biotite, Fe-Ti oxides, zircon, and apatite. K_2O and Na_2O do not follow a regular pattern among the various phases of the different plutons. However, Rb consistently increases between Unit 2 and 3 and then decreases in Unit 4.

Granites of the Burnthill Brook area are markedly enriched in SiO_2, K_2O, Rb, and depleted in CaO, MgO, Sr, and Ba compared to the average granite (Krauskopf 1967). Y values are slightly higher, Zr values slightly lower, and Nb values about the same as in the average granite. These features are characteristic of slightly peraluminous anorogenic granites that are generally interpreted to have been generated from anhydrous granulite-grade crustal rocks. Such granites are known to be associated with economic concentrations of lithophile elements, i.e., Sn, U, F, Be, and Li (Collins et al. 1982; Christiansen et al. 1986).

METALLIC MINERAL OCCURRENCES

Many of the altered or mineralized samples from the Burnthill pluton and its surrounding country rock (Plate 86-241A) carry significant values of tin and/or tungsten. Molybdenum and tungsten mineralization in float was first reported in the McLean Brook area by Poole (1963). In 1979, J.D. Irving Ltd. drilled four holes in granite on the west side of McLean Brook on the basis of Mo-W soil anomalies. Sparse molybdenite was encountered on joint surfaces, and in small veins where it was locally accompanied by wolframite. The best sections assayed 0.34% Mo over 0.6 m in hole MB-2-79 and 0.15% W over 0.3 m in hole MB-1-79 (Wilson 1980). Trenching farther west in 1980 exposed greisenized granite with quartz veins containing wolframite and molybdenite (Wilson and Stevenson 1981). Hole MB-5-84, drilled in 1984, intersected a 30 cm wide quartz vein hosting significant amounts of molybdenite (Wilson 1984). Fractured and altered granite samples from McLean Brook North contain 59 to 1700 ppm W and 14 to 538 ppm Mo (samples 85-BH-129B to -133B, Tables 4 and 9; Appendix I).

Quartz veining in sedimentary rocks from trenches near the mouth of Two and a Half Mile Brook contains 297 ppm Sn and 546 ppm W (sample MB-5, Tables 4 and 9; Appendix I). A sample of greisenized granite rubble near the head of the same stream contains 198 ppm Sn and 889 ppm W (sample 85-BH-285A, Tables 4 and 9).

The Burnthill tungsten deposit, located on the southern margin of the Burnthill pluton, comprises exogranitic quartz-vein swarms containing wolframite, cassiterite, and sulphide minerals. The veins, which follow the regional fracture system, pass at depth into endogranitic greisen veins within a buried cupola of fine-grained equigranular granite. Grab samples of quartz veining collected from the Burnthill mine dump contain up to 518 ppm W, 1900 ppb Au, 7430 ppm Mo, and 1500 ppm Be (samples BHM-1 and ALD-3, Tables 4, 8, and 9; Appendix I).

An exposed cupola of coarsely porphyritic granite, underlying "Tin

Hill" on the southeastern flank of the Burnthill pluton, is transected by greisen-bordered quartz veins containing wolframite and cassiterite (MacLellan 1985; Taylor et al. 1987). Greisen from the cupola on "Tin Hill" near Buttermilk Brook contains up to 9400 ppm Sn and 566 ppm W (samples TH-1 and -3, Tables 4 and 9; Appendix I).

Significant tin mineralization is associated with equigranular granite (Unit 3, Plate 87-55A) on the headwaters of the Little Dungarvon River along the southern margin of the Dungarvon pluton. The area was staked by Kidd Creek Mines Ltd. in 1981 on the basis of Mo and W anomalies in soils. Trenching and rock geochemistry done in 1983 revealed several veins carrying up to 34 800 ppm Sn (Gardiner 1984a). Five holes, drilled in 1985, suggest that the mineralization is sporadically distributed over widely spaced fracture zones (Gardiner 1985a). A quartz vein containing disseminated cassiterite from the main Dungarvon showing assayed 6850 ppm Sn (sample DC-1, Tables 5 and 13; Appendix II). A quartz stockwork farther east along the Little Dungarvon River contains 195 ppm Mo, 460 ppm W, and 39 ppm Sn as well as elevated values of Cu, Pb, and Zn (sample 86-BH-248, Tables 5 and 13). A quartz-fluorite breccia along the Four Mile Brook fault contains 368 ppm Sn (sample 86-BH-243, Tables 5 and 13; Appendix II).

Farther to the southwest, the Four Mile Brook (vein 1) tin showing occurs as narrow quartz veins cutting feldspathized granite (Unit 2a) along the western contact of the Dungarvon pluton. In 1981, Sulpetro Minerals Ltd. located a soil anomaly of 72 ppm Sn in the area. As a result, Kidd Creek Mines Ltd. optioned the property in 1982 and carried out trenching and further soil sampling in 1983. A 1.5 m wide cassiterite-bearing feldspar vein was discovered in trench 19 (Gardiner 1984b). Three drill holes were put down in 1984; an intersection of the trench 19 vein assayed 0.5% Sn over 1.8 m (Gardiner 1985b). Surface samples of veins from trenches 18 and 19 assayed between 7300 and 12 700 ppm Sn (samples SO-18-1, SO-19-1, Tables 5 and 13; Appendix II), whereas the brecciated host yielded 43 ppm Sn (sample 86-BH-264B, Tables 5 and 13).

The Cleveland prospect, located farther east along the Little Dungarvon River, was discovered by prospector Boyd Cleveland in 1959 and trenched in 1960 (Jensen 1986a). A sample of fine-grained sulphide-bearing greisen from the showing contains 1200 ppm Cu, 4400 ppm Pb, 3800 ppm Zn, 97 ppm Sn, and 49 ppm Ag (sample CLEVP, Tables 5 and 13; Appendix II).

A potential for economic concentrations of uranium exists along the eastern margin of the Dungarvon pluton. East of Harris Lake, a silicified granite breccia, which gave a ground scintillometer response of between 500 and 600 cps, assayed 207 ppm U (sample 86-BH-131B, Tables 5 and 14; Appendix II). Sb, Mo, and W values are also slightly elevated in the breccia (Table 13). Another breccia, a short distance to the south, contains 259 ppm Mo (sample 86-BH-189, Tables 5 and 13).

A recent airborne survey in the area has revealed a large radiometric anomaly that appears to be centred on a fine-grained granite (Unit 3c, Plate 87-55A) to the northeast of Harris Lake (Geological Survey of Canada 1987). Three holes were drilled for Home Oil Co. Ltd. in 1981 in order to investigate the source of a ground scintillometer anomaly along the northern margin of the fine-grained granite. Gamma ray readings up to 1150 cps in the core appear to be related to fractures in the granite, but no uranium minerals were identified (Niggemann 1981).

An exogranitic quartz-vein system occurs in the vicinity of Peaked Mountain near the eastern contact of the Dungarvon pluton. Interest in this area was stimulated by the presence of 330 ppm W in a till sample obtained from a site to the west of Middle Peaked Mountain Lake in 1982 by Kidd Creek Mines Ltd. Subsequently, prospecting led to the discovery of low-grade W-Mo mineralization related to an east-southeast-trending vein system some 110 m long by 250 m wide within gabbroic and mafic volcanic rocks. The quartz veins, which vary from a few millimetres to 5 cm in width, contain wolframite, scheelite, molybdoscheelite, and molybdenite. A quartz vein, containing some large wolframite crystals, assayed 114 ppm Mo, 42 ppm W, and 100 ppm Zn (sample PML-1, Tables 5 and 13; Appendix II). Kidd Creek Mines Ltd. reports values ranging from 12 to 2650 ppm Mo and 16 to 450 ppm W (Gardiner 1984c).

Endogranitic greisen lenses are extensively developed along the southeastern contact of the Trout Lake pluton (Plate 87-57A). Kidd Creek Mines Ltd. trenched the area in 1985 following the discovery of tin-rich greisen boulders in 1984. Several cassiterite-bearing greisen lenses from 30 cm to 4 m wide were outlined trending between 105° and 125° with strike lengths up to 450 m. Aplite dykes and beryl-bearing pegmatitic pods are locally associated with the greisen zones. A channel sample from trench 85-27 assayed 0.54% Sn over 1.87 m, and from trench 85-19 assayed 0.21% Sn over 4.4 m (Jensen 1986b). A greisen sample from trench 85-19 ran 384 ppm Sn (sample 86-BH-329, Tables 6 and 17; Appendix III).

Steep-dipping quartz veins from 1 to 3 cm in width parallel the trend of the greisen lenses in the Trout Lake pluton. The quartz veins contain fluorite, pyrite, arsenopyrite, chalcopyrite, sphalerite, cassiterite, and wolframite and are bordered by 3 to 10 cm of greisen. Relatively low tin values (207-274 ppm) were recorded by Kidd Creek Mines Ltd. from these southeast-trending veins, but a single, 2 m wide, northeast-trending quartz vein ran 3027 ppm Sn (Jensen 1986b).

An exogranitic quartz-vein system within the southern contact aureole of the Trout Lake pluton has recently been investigated for its tin potential. Base-metal mineralization had been known in the Todd Mountain area since 1939, but in 1980 Shell Canada Ltd. identified high tin values in tills. In 1981, cassiterite-bearing veins were observed in outcrop adjacent to the fire tower site on Todd Mountain. These veins occupy prominent joints that are spaced from 12 to 18 cm apart and trend between 115° to 120° with steep dips to the north. The joint set is mineralized with cassiterite, arsenopyrite, quartz, muscovite, and chlorite (Richardson 1981).

In 1982, Billiton Canada Ltd. acquired the property and stripped a large area to expose bedrock (Goodwin 1983). Nine holes were drilled in 1983 with best intersections of 0.67% Sn over 1.5 m and 0.18% over 15 m (G. Lutes, personal communication 1988). A sample of a quartz vein collected from the fire tower exposure assayed 1580 ppm Sn (sample TM-3, Tables 6 and 17; Appendix III).

CONCLUSION

Tin-tungsten mineralization is associated with a cluster of post-tectonic epizonal plutons in the Burnthill Brook area of central New Brunswick. These granites are comprised of four texturally and mineralogically distinct units that occur in varying porportions in each pluton: Unit 1 is a medium-grained

melanocratic, biotite granite; Unit 2 is a coarse- to medium-grained, seriate, biotite granite; Unit 3 is a fine- to medium-grained, equigranular, biotite granite; and Unit 4 comprises dykes of aplite and porphyritic microgranite, and veins or pods of pegmatite and granophyric granite.

Mineralized occurrences are invariably found in close association with equigranular, fine-grained granite of Unit 3 in the vicinity of the southern or southeastern margins of the granites. These equigranular granites have been interpreted to be the product of late crystallization in the fluid-enriched roof zone of the plutons, which have been subsequently downtilted to the south (MacLellan et al. 1986). Subsolidus fracturing of these roof-zone granites and country rocks generally occurred during cooling, producing joints controlled by the regional stress pattern, and allowing the mineralizing fluids to escape. The jointing frequency is much greater in areas of mineralization, an indication that fluid pressures contributed to the brittle failure of the roof-zone granites and overlying sedimentary rocks. Examples of joint-controlled deposits include Burnthill tungsten, Tin Hill, Todd Mountain, and Peaked Mountain.

An earlier escape of fluids, caused by localized shearing, may have produced the quartz-feldspar-cassiterite veins and stockworks and associated feldspathized granite of the Little Dungarvon River and Four Mile Brook showings. In areas where fluids remained trapped within the granite (e.g., Trout Lake greisen showing), zones of greisenization developed that are generally conformable with the southern granite contact.

Recent exploration activity has resulted in the discovery of several new tin- and tungsten-bearing mineral showings in the Burnthill Brook area. Lithogeochemical analyses of grab samples from these showings have confirmed the presence of elevated concentrations of tin, tungsten, molybdenum, and base metals. Many of these occurrences are inadequately explored (e.g., Todd Mountain and Trout Lake showings; and an area of greisenized granite at sample site 85-BH-285A, Tables 4 and 9). Furthermore, the potential still exists for the discovery of new deposits in the area.

Several samples collected during the present study contain high concentrations of precious metals (most notably BHM-1 from the Burnthill tungsten mine dump, containing 1900 ppb Au, and CLEVP from the Cleveland Prospect, containing 49 ppm Ag). Since only a few, relatively small grab samples were collected from each showing, precious metals may be present in some showings without having been detected. Anomalous values of Au (3 ppm over 1.5 m) have been reported from drill core at the Lower Hayden Brook showing (Crosby 1977) to the south of the study area, but were not confirmed in this investigation (sample LHB-1, Tables 4 and 9; Appendix I). Since no other gold or silver exploration activity has been reported in the Burnthill Brook area, a program of systematic exploration for precious metals seems warranted.

ACKNOWLEDGEMENTS

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KEY TO

- NEW BRUNSWICK MINERAL DEPOSITS FILE -

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: compilation date PAGE:

name of deposit | NTS map designation | latitude | longitude

COMMODITIES: element "commodity status"/"chemical class" (see next page)

METALLICS: metallic minerals present

NON-METAL: nonmetallic minerals present
ALTER'N: alteration minerals present

DEPTYPE (): mineral deposit classification(s)

CHARACTER: style of mineralization

RELATION HOST: relationship of mineralization to: host rocks

RELATION STRUCT: structure

RELATION META: metamorphism

FORMATION: unit names of host (H) and associated (A) rocks (H or A) AGE: maximum/minimum stratigraphic ages

ZONE/BELT: New Brunswick tectonostratigraphic division

NOTES: other relevant geological information

REMARKS: details of locations

MAP REF: map designation; publishing organization ON MAP: is occurrence shown on map?
BIBLIO: reference #/page(s) - (see next page)

ASSESS: assessment file(s)

DISCOVERY: when discovered - how (if known) - by whom

CORE: is there core available for examination? if yes, locality is given.

TPA: is there tonnage (T), production (P), or assay (A) data? (A0 = no; A1, T1, or P1 = yes)

CLAIM STATUS: is it open, staked, or under mining lease? DATE OF STATUS: date of current status

Codes used for the New Brunswick mineral deposits file:

COMMODITIES: **element "commodity status"/"chemical class"**

example:

COMMODITIES: SN 7/1

"commodity status":

1. being produced
2. tonnage defined
3. past producer - with tonnage
4. past producer - exhausted
5. grade + 2-dimensional data
6. grade + 1-dimensional data
7. commodity present

"chemical class":

1. native metal, oxide, hydroxide
2. sulphide, sulfosalt, arsenide, antimonide, telluride
3. silicate
4. sulphate, phosphate,carbonate, tungstate
5. halide
6. not known (may occur in other minerals

BIBLIO: **reference #/page(s)**

example:

BIBLIO: 433/29-32

"bibliographic reference number":

page(s):

Note: The bibliographic data are contained within a separate file that may be obtained from the Geological Surveys Branch of the New Brunswick Department of Natural Resources and Energy.

APPENDIX I

- New Brunswick Mineral Deposits File -

Mineral occurrences associated with the Burnthill pluton

(Locations on Plate 86-241A)

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 05/18/88

BEAVER BROOK LAKE BERYL 21 J 10 W 46 43 28 66 55 42

COMMODITIES: BE 7/3

METALLICS:

NON-METAL: BERYL

ALTER'N :

DEPTYPE (1): INTRAMAGMATIC IN FELSIC INTRUSIONS, PEGMATITES, APLITES & FELDSPATHIC VEINS
(2):

CHARACTER: IN EARLY DEVONIAN GRANODIORITE. NO DETAILED DESCRIPTION AVAILABLE

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: LOST LAKE GRANITE (H) AGE: DEVONIAN, EARLY / DEVONIAN, EARLY

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 79-32 DNR ON MAP: NO
GEOL NR-4 DNR ON MAP: YES

BIBLIO : 097/

ASSESS :

DISCOVERY: 1978- MAPPING- CROUSE,G.W.

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 06 01

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/18/88

BURNT HILL TUNGSTEN 21 J 10 W 46 34 10 66 48 30

COMMODITIES: W 3/4 , SN 3/1 , MO 3/2 , BE 7/3 , F 7/5 , CU 7/2 , AS 7/2 , BI 7/1 , TI 7/1 , ZN 7/2 , PB 7/2

METALLICS: WOLFRAMITE, CASSITERITE, MOLYBDENITE, ARSENOPYRITE, PYRITE, PYRRHOTITE, SPHALERITE, GALENA, CHALCOPYRITE, BISMUTH- NATIVE

NON-METAL: SCHEELITE, BERYL, ANATASE, QUARTZ, TOPAZ,

ALTER'N : MUSCOVITE, SILICA, SERICITE, FLUORITE

DEPTYPE (1): QUARTZ-CARBONATE VEINS AND STOCKWORKS IN FRACTURES AND/OR SHEAR ZONES
(2): GREISEN-STOCKWORK-VEIN

CHARACTER: A NW-STRIKING SHEETED VEIN SYSTEM PARALLELS GREISENIZED VEINS CUTTING LATE CAMBRIAN TO EARLY ORDOVICIAN QUARTZITE AND ARGILLITE. THERE ARE 3 VEIN TYPES, DEFINED BY MINERAL ASSEMBLAGE. VEINS RANGE FROM 1 IN TO 6 FT IN WIDTH, AND ARE MINERALIZED IN A ZONE 1000 X 500 FT TO A DEPTH OF 600 FT.

RELATION HOST :

RELATION STRUCT: VEINS FILL TENSION FRACTURES, SEVERAL PHASES RECOGNIZED. FRACTURES STRIKING 100-120 WERE RE-OPENED BY FAULTING & NEW FRACTURES (120-140) DEVELOPED.

RELATION META : THE VEINS OCCUR IN THE RETROGRADE CHLORITE AUREOLE OF A DEVONIAN GRANITE SITTING 600 FT BELOW THE DEPOSIT.

FORMATION: TETAGOUCHE GROUP (H) AGE: CAMBRIAN / ORDOVICIAN, EARLY
TETAGOUCHE GROUP (H) AGE: CAMBRIAN / ORDOVICIAN, EARLY
BURNTHILL GRANITE (A) AGE: DEVONIAN, MIDDLE / DEVONIAN, MIDDLE

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: INCLUDES SN, W, MO, F VEINS 1KM NORTH, 1.1KM NW & 0.9KM NW OF MAIN ADIT.

MAP REF: GEOL MR 81-5 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 097/41-42 098/48-56 099/ 100/65 295/

ASSESS : 472443/MIRAMICHI LUMBER CO./1979 470290/BURNT HILL TUNGSTEN LTD./1956

DISCOVERY: 1868-MAPPING- C.ROBB, GSC

CORE: NO

TPA : T1

CLAIM STATUS: MINING DATE OF STATUS: 87 03 01

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

CLEARWATER BROOK 21 J 10 E 46 36 33 66 44 51

COMMODITIES: CU 7/2 , AS 7/2

METALLICS: CHALCOPYRITE, ARSENOPYRITE, PYRITE

NON-METAL:

ALTER'N :

DEPTYPE (1): QUARTZ-CARBONATE VEINS AND STOCKWORKS IN FRACTURES AND/OR SHEAR ZONES
(2):

CHARACTER: SULPHIDES IN QUARTZ VEINS CUTTING HORNFELSED CAMBRO-ORDOVICIAN ARGILLITE & QUARTZITE. THIS OCCURRENCE IS SITUATED APPROX HALF-WAY BETWEEN THE BURNTHILL AND TROUT BROOK STOCKS.

RELATION HOST :

RELATION STRUCT:

RELATION META : WITHIN CONTACT METAMORPHIC AUREOLE, BUT NO INTRUSION IS EXPOSED.

FORMATION: TETAGOUCHE GROUP (H) AGE: CAMBRIAN / ORDOVICIAN
TETAGOUCHE GROUP (H) AGE: CAMBRIAN / ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 80-55 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 222/

ASSESS :

DISCOVERY: C.1960-MAPPING-W.H. POOLE

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/18/88

CLEARWATER BROOK BERYL N & S 21 J 10 W 46 38 50 66 47 56

COMMODITIES: BE 7/3

METALLICS:

NON-METAL: BERYL

ALTER'N :

DEPTYPE (1): INTRAMAGMATIC IN FELSIC INTRUSIONS, PEGMATITES, APLITES & FELDSPATHIC VEINS
(2): GREISEN-STOCKWORK-VEIN

CHARACTER: NO DESCRIPTIONS AVAILABLE. NORTH OCCURRENCE MAY BE IN A PEGMATITE MAPPED BY MACLELLAN. SOUTH OCCURRENCE IS PROBABLY GREISEN VEINS SIMILAR TO THOSE AT BURNTHILL.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: BURNTHILL GRANITE (H) AGE: DEVONIAN, MIDDLE / DEVONIAN, MIDDLE

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION GIVEN IS FOR NORTH OCCURRENCE. SOUTH OCCURRENCE= 46 37 25 & 66 49 09. LOCATIONS APPROXIMATE

MAP REF: GEOL NR-4 DNR ON MAP: YES
GEOL MP 86-241 DNR ON MAP: NO
BIBLIO : 097/ 375/27 098/

ASSESS :

DISCOVERY:

CORE: NO

TPA : AO

CLAIM STATUS: STAKED DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

LOWER BURNTHILL BROOK-A,B,C 21 J 10 W 46 34 58 66 49 36

COMMODITIES: W 7/4 , MO 7/2 , SN 7/1 , F 7/5 , BE 7/3

METALLICS: WOLFRAMITE, MOLYBDENITE, CASSITERITE

NON-METAL: BERYL, QUARTZ

ALTER'N : MUSCOVITE, FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: QUARTZ VEINS WITH GREISEN BORDERS CONTAINING FINE TO MEDIUM-GRAIN ED WOLFRAMITE/ MOLYBDENITE/ CASSITERITE/ BERYL & FLUORITE CUTTING MIDDLE DEVONIAN MICROGRANITE & LOCALLY HORNFELSED CAMBRO-ORDOVIC IAN QUARTZITES. THE VEINS TREND 110-120 DEG.

RELATION HOST :

RELATION STRUCT:

RELATION META : THE C OCCURRENCE IS IN HORNFELSED SED ROCKS.

FORMATION:	BURNTHILL GRANITE	(H) AGE:	DEVONIAN, MIDDLE	/ DEVONIAN, MIDDLE
	TETAGOUCHE GROUP	(H) AGE:	CAMBRIAN, LATE	/ ORDOVICIAN, EARLY
	TETAGOUCHE GROUP	(A) AGE:	CAMBRIAN, LATE	/ ORDOVICIAN, EARLY

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 35 01 & 66 49 21; C= 46 35 04 & 66 48 56.

MAP REF: GEOL MP 86-241 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: NO

BIBLIO : 097/ 098/ 375/27

ASSESS :

DISCOVERY: PRE-1940

CORE: NO

TPA : A0

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 88/19/88

LOWER HAYDEN BROOK 21 J 07 E 46 28 54 66 44 54

COMMODITIES: CU 6/2 , PB 6/2 , ZN 6/2 , AG 6/6 , AU 6/1 , F 7/5 , SN 7/6

METALLICS: CHALCOPYRITE, GALENA, SPHALERITE, SILVER, TIN, GOLD, PYRITE

NON-METAL:

ALTER'N : CHLORITE, EPIDOTE, FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: CHLORITE-BASE METAL LODE (DYKE?) AT LEAST 3 METERS WIDE TRENDING APPROX N70-80E. LODE CUTS QUARTZITES. NEAREST EXPOSED GRANITE IS 7 KM TO THE NNE ALTHOUGH THE HORNFELS (BIOTITE) ZONE EXTENDS INTO THE VICINITY OF THE SHOWING.

RELATION HOST :

RELATION STRUCT:

RELATION META : LODE OUTSIDE BIOTITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION: TETAGOUCHE GROUP (H) AGE: [illegible] / CAMBRIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES: W. GARDINER- PERS. COMM.- REPORTS UP TO 1200 PPM SN IN AN ANOMALOUS ZONE APPROX 500 M LONG.

REMARKS: ZONE 4= 46 28 28 & 66 44 36; DRILLING INTERSECTED PB, ZN & PYRITE - NO ASSAYS (ASSESS FILE 472092)

MAP REF: GEOL MP 84-308 DNR ON MAP: NO

BIBLIO : ON MAP:

ASSESS : 472502/472092/472445/MIRAMICHI LUMBER CO./1976/1977/1973

DISCOVERY: PRE-1976- MIRAMICHI LUMBER CO.

CORE: NO

TPA : A1

CLAIN STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

MCLEAN BROOK NORTH-A,B,C,D,E 21 J 10 W 46 35 04 66 54 30

COMMODITIES: MO 6/2 , W 6/6 , CU 7/2 , SN 7/1 , F 7/5

METALLICS: MOLYBDENITE, W MINERALS, CHALCOPYRITE, PYRITE, CASSITERITE

NON-METAL: QUARTZ

ALTER'N : EPIDOTE, SILICA, FLUORITE

DEPTYPE (1): 'PORPHYRY-TYPE' DEPOSITS

(2): GREISEN-STOCKWORK-VEIN

CHARACTER: MO, W & CU AS DISSEMINATIONS & SMEARS ON FRACTURES & IN QUARTZ VE INLETS CUTTING DEVONIAN GRANITE (EXCEPT 'C' WHICH CUTS HORNFELSED QUARTZITES). MINERALIZED FLOAT OCCURS WEST OF 'A' & NORTH OF 'D'

.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: BURNTHILL GRANITE (H) AGE: DEVONIAN, MIDDLE / DEVONIAN, MIDDLE
TETAGOUCHE GROUP (H) AGE: CAMBRIAN, LATE / ORDOVICIAN, EARLY

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCN. B= 46 34 47 & 66 54 13; C= 46 34 33 & 66 56 09; D= 46 34 14 & 66 52 45; E= 46 34 29 & 66 54 41

MAP REF: GEOL MP 79-34 DNR ON MAP: YES
GEOL MP 86-241 DNR ON MAP: YES

BIBLIO : 433/29-32 098/ 097/

ASSESS : 472520/J.D. IRVING LTD. (ATLANTIC COAST COPPER)/1980 472926/J.D . IRVING LTD./1981

DISCOVERY: C.1960- MAPPING- W.H. POOLE

CORE: NO

TPA : A1

CLAIM STATUS: STAKED DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/13/88

MCLEAN BROOK SOUTH-N.B.C 21 J 10 W 46 33 37 66 52 33

COMMODITIES: CU 7/2 , ZN 7/2 , AS 7/2

METALLICS: CHALCOPYRITE, SPHALERITE, ARSENOPYRITE, PYRITE, PYRRHOTITE

NON-METAL:

ALTER'N :

DEPTYPE (1): QUARTZ-CARBONATE VEINS AND STOCKWORKS IN FRACTURES AND/OR SHEAR ZONES
(2):

CHARACTER: NO DESCRIPTION AVAILABLE.

RELATION HOST :

RELATION STRUCT:

RELATION META : SHOWINGS WITHIN BIOTITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION: TETAGOUCHE GROUP (H) AGE: [illegible]
BURNTHILL GRANITE (A) AGE: [illegible]

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 33 28 & 66 51 42; C= 46 33 13 & 66 51 09.

MAP REF: GEOL MP 79-34 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 225/

ASSESS :

DISCOVERY: 1960- POOLE/ 1979- CROUSE

CORE: NO

TPA : A0

CLAIM STATUS: STAKED DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

OTTER BROOK 21 J 10 W 46 39 48 66 48 15

COMMODITIES: F 7/5 , CU 7/2 , ZN 7/2

METALLICS: CHALCOPYRITE, SPHALERITE, PYRITE, PYRRHOTITE, HEMATITE

NON-METAL: QUARTZ

ALTER'N : MUSCOVITE, EPIDOTE, ILLITE, FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: FREQUENT FLUORITE VEINS & FLUORITE AS VUG FILLINGS IN QUARTZ VEINS, BOTH CUTTING DEVONIAN GRANITE. SULPHIDES OCCUR AS DISSEMINATIONS IN VEINS & ALONG FRACTURES. GREISEN ALTERATION OF THE GRANITE BORDERS THE VEINS.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: BURNTHILL GRANITE (H) AGE: DEVONIAN, MIDDLE / DEVONIAN, MIDDLE

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 86-241 DNR ON MAP: YES
GEOL MP 79-33 DNR ON MAP: NO

BIBLIO :

ASSESS : 472712/WESTMIN RESOURCES/1981

DISCOVERY: 1981- DRILLING- D.HATTIE

CORE: NO

TPA : AB

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 88/20/88

TIN HILL-A,B,C,D 21 J 10 W 46 35 30 66 47 27

COMMODITIES: SN 7/1 , W 7/4 , MO 7/2

METALLICS: CASSITERITE, WOLFRAMITE, MOLYBDENITE, MAGNETITE, PYRITE

NON-METAL: QUARTZ

ALTER'N : SERICITE, CHLORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2): "PORPHYRY-TYPE" DEPOSITS

CHARACTER: "A" IS GREISEN-BORDERED QUARTZ VEIN SWARM IN SHALLOWLY UNROOFED F ELDSPAR-PORPHYRITIC GRANITE. VEINS TREND 120 & CONTAIN COARSE CAS SITERITE/WOLFRAMITE/MAGNETITE CRYSTALS TO SEVERAL CM. "B" & "C" A RE QUARTZ VEINLETS WITH W & MO CUTTING GRANITE & HORNFE LSED QUARTZITES.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: BUTTERMILK BROOK GRT (H) AGE: [illegible]
TETAGOUCHE GROUP (H) AGE: [illegible]

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 35 41 & 66 47 31; C= 46 35 36 & 66 47 05; D= 46 35 16 & 66 46 55.

MAP REF: GEOL MP 80-56 DNR ON MAP: YES
GEOL MP 86-241 DNR ON MAP: YES

BIBLIO : 433/29-32 098/48 206/

ASSESS :

DISCOVERY: 1979- R. CROSBY

CORE: NO

TPA : A0

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

TWO & ONE-HALF MILE BROOK 21 J 10 W 46 33 36 66 51 06

COMMODITIES: SN 7/1 , W 7/4 , F 7/5 , AS 7/2

METALLICS: CASSITERITE, WOLFRAMITE, ARSENOPYRITE

NON-METAL: QUARTZ

ALTER'N : FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: CLOSELY-SPACED (1-5CM) PARALLEL (STRIKE 110-120) QUARTZ VEINS & V EINLETS CUTTING HORNFELSED ORDOVICIAN LITHIC WACKE & SLATE.

RELATION HOST :

RELATION STRUCT:

RELATION META : VEIN SWARM WITHIN BIOTITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION:	TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
	TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
	BURNTHILL GRANITE	(A) AGE:	DEVONIAN, MIDDLE	/ DEVONIAN, MIDDLE

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 86-241 DNR ON MAP: YES
GEOL MP 79-34 DNR ON MAP: NO

BIBLIO : 433/29-32 097/ 098/

ASSESS : 473019/MIRAMICHI LUMBER/1984

DISCOVERY: C.1984- R.M. CROSBY

CORE: NO

TPA : A0

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

APPENDIX II

- New Brunswick Mineral Deposits File -

Mineral occurrences associated with the Dungarvon and Sisters Brook plutons

(Locations on Plate 87-55A)

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

CLEVELAND PROSP. & L.DUNGARVON 21 J 10 E 46 40 11 66 34 15

COMMODITIES: ZN 7/2 , CU 7/2 , PB 7/2 , AG 7/6 , SN 7/1 , MO 7/2 , F 7/5

METALLICS: CHALCOPYRITE, GALENA, SPHALERITE, SILVER, CASSITERITE, MOLYBDENITE, PYRITE

NON-METAL: QUARTZ, K-FELDSPAR

ALTER'N : SERICITE, CHLORITE, ILLITE, HEMATITE, FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2): INTRAMAGMATIC IN FELSIC INTRUSIONS, PEGMATITES, APLITES & FELDSPATHIC VEINS

CHARACTER: CLEVELAND- SULPHIDES WITHIN A MUSCOVITE-QUARTZ GREISEN VEIN (STRIKING 105) IN DEVONIAN GRANITE. WIDTH OF 3.5 FEET. LITTLE DUNGARVON- RUBBLE/SUBCROP OF QUARTZ/FELDSPAR VEINS CUTTING GRANITE (STRIKE 130?) & CONTAINING CASSITERITE & FLUORITE. THESE VEINS ARE LATE MAGMATIC-EARLY HYDROTHERMAL IN ORIGIN.

RELATION HOST : CLEVELAND OCCURRENCE IS ASSOCIATED WITH MEDIUM TO COARSE-GRAINED GRANITE. LITTLE DUNGARVON IS ASSOC WITH FINE TO MEDIUM-GRAINED GRANITE.

RELATION STRUCT:

RELATION META :

FORMATION: DUNGARVON GRANITE (H) AGE: DEVONIAN, LATE / DEVONIAN, LATE
TETAGOUCHE GROUP (A) AGE: ORDOVICIAN / ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LITTLE DUNGARVON SN-F IS AT 46 40 36 & 66 33 48.

MAP REF: GEOL MP 79-29 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 228/ 244/ 382/57-60

ASSESS : 473099/KIDD CREEK MINES/1985 473018/KIDD CREEK/1984 472614/BETH-CANADA/1980 472463/BETH-CANADA/1979

DISCOVERY: 1959-B.CLEVELAND, 1983-GARDINER

CORE: NO

TPA : A1

CLAIM STATUS: STAKED DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 88/10/88

DUNGARVON (VEINS 2,4,6,11,14) 21 J 10 E 46 40 08 66 36 39

COMMODITIES: SN 6/1 , F 7/5 , MO 7/2 , CU 7/2 , PB 7/4 , NB 7/6

METALLICS: CASSITERITE, MOLYBDENITE, CHALCOPYRITE, PYRITE, MAGNETITE

NON-METAL: QUARTZ, ANHYDRITE, ANGLESITE, CALCITE, EPIDOTE, CHALCEDONY, K-FELDSPAR
ALTER'N : FLUORITE, KAOLIN, CHLORITE, ILLITE, HEMATITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN
(2):

CHARACTER: 4 BASIC TYPES: 1) FELDSPAR +/- FLUORITE +/- BIOTITE +/- EPIDOTE, 2) QUARTZ +/- FELDSPAR +/- CHLORITE, 3) TABULAR QUARTZ STOCKWORK ZONES, 4) QUARTZ +/- FLUORITE BRECCIAS. ALL CONTAIN CASSITERITE, ARE MIAROLITIC & HAVE LITTLE OR NO ASSOC ALTERATION. VEINS FROM <1-200CM, STOCKWORKS TO 15M WIDTH.

RELATION HOST : ALL VEINS CUT MEDIUM TO COARSE-GRAINED DEVONIAN GRANITE.

RELATION STRUCT: ALL VEINS & STOCKWORK ZONES TREND 130. ASSOC WITH 2 MAJOR FAULTS-ONE TRENDING 85 & ONE AT 135.

RELATION META :

FORMATION: DUNGARVON GRANITE (H) AGE: [illegible] [illegible]

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCN IS VEIN 4; VEIN 11=46 40 08 & 66 36 18; VEIN 6=46 40 11 & 66 36 07; VEIN 2=46 40 13 & 66 36 00.

MAP REF: GEOL MP 80-55 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 222/ 382/57-60 475/ 206/ 461/

ASSESS : 473103/473012/KIDD CREEK/1985/1984

DISCOVERY: 1981-GARDINER, 1983-J.CARROLL

CORE: YES-FTON

TPA : A2

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

DUNGARVON (VEINS 3 & 5) 21 J 10 E 46 40 48 66 36 20

COMMODITIES: SN 7/1 , F 7/5

METALLICS: CASSITERITE, PYRITE

NON-METAL: QUARTZ, K-FELDSPAR, CHALCEDONY

ALTER'N : FLUORITE, CHLORITE, ILLITE, HEMATITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: VEIN 5A= QUARTZ + K-FELDSPAR + CASSITERITE + CHALCEDONY/JASPER VE IN OF 20 CM WIDTH. VEIN IS MULTIGENERATIONAL. VEIN 5B IS 20 METER S NORTH OF 5A & IS A 30 CM WIDE HYDROTHERMAL BRECCIA OF QUARTZ-FL UORITE-PYRITE-GRANITE. VEIN 3 IS A QUARTZ-CHLORITE-CASS ITERITE VEIN OF AT LEAST 50 CM WIDTH (SUBCROP).

RELATION HOST : VEINS IN DEVONIAN GRANITE WITHIN 50 METERS OF GRANITE ROOF & MAFI C VOLCANICS.

RELATION STRUCT: VEINS 5A & 5B TREND 130/90.

RELATION META :

FORMATION: DUNGARVON GRANITE (H) AGE: DEVONIAN, LATE / DEVONIAN, LATE
TETAGOUCHE GROUP (A) AGE: ORDOVICIAN / ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: VEIN 3= 46 40 27 & 66 36 31.

MAP REF: GEOL MP 80-55 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 382/57-60 222/

ASSESS : 473103/473012/KIDD CREEK MINES/1985/1984

DISCOVERY: 1983- PROSPECTING- W.GARDINER

CORE: NO

TPA : A2

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/18/88

DUNGARVON (VEIN 7) 21 J 10 E 46 39 58 66 36 38

COMMODITIES: SN 7/1 , F 7/5 , CU 7/2

METALLICS: CASSITERITE, PYRITE, CHALCOPYRITE

NON-METAL: QUARTZ

ALTER'N : FLUORITE, ILLITE, HEMATITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: 2-METER(+)-WIDE FAULT ZONE (FOUR MILE BROOK FAULT) FILLED WITH MA SSIVE QTZ-FLUORITE. QTZ VEINLETS IN SURROUNDING GRANITE CARRY CAS SITERITE. 50M WEST OF FAULT ARE NUMEROUS VEINS OF FLUORITE, PYRIT E & CHALCO PLUS ASSOC FELSITE & FELDSPAR VEINS. 800 & 1 400M ALONG TO SE ARE BOULDERS OF FLUORITE BRECCIA.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: DUNGARVON GRANITE (H) AGE: DEVONIAN DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 80-55 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 382/57-60 222/

ASSESS :

DISCOVERY: 1984- PROSPECTING- W.GARDINER

CORE: NO

TPA : A0

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 05/18/88

FALL BROOK (JOHNSTON) 21 J 15 E 46 46 38 66 32 33

COMMODITIES: SN 7/1 , W 7/4 , MO 7/2 , F 7/5

METALLICS: CASSITERITE, WOLFRAMITE, MOLYBDENITE, PYRITE

NON-METAL: K-FELDSPAR, QUARTZ

ALTER'N : FLUORITE, SERICITE, HEMATITE, ILLITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2): INTRAMAGMATIC IN FELSIC INTRUSIONS, PEGMATITES, APLITES & FELDSPATHIC VEINS

CHARACTER: QUARTZ & QUARTZ-GREISEN VEINS IN FINE-GRAINED PHASE OF GRANITE, ADJACENT TO HORNFELSED CAMBRO-ORDOVICIAN QUARTZITE & PHYLLITE. QUARTZ VEINS CONTAIN MOLYBDENITE & WOLFRAMITE. QUARTZ-GREISEN VEINS CONTAIN CASSITERITE. FLUORITE OCCURS AS VEINLETS & AS VUG FILLINGS IN QUARTZ &/OR FELDSPAR VEINS.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: DUNGARVON GRANITE (H) AGE: DEVONIAN, LATE / DEVONIAN, LATE
TETAGOUCHE GROUP (A) AGE: CAMBRIAN / ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: FLUORITE SHOWINGS- LOCATION B=46 46 29 & 66 33 08; C=46 46 18 & 66 33 10.

MAP REF: GEOL MP 87-55 DNR ON MAP: YES
GEOL MP 84-315 DNR ON MAP: NO

BIBLIO : 382/57-60 528/

ASSESS : 473195/KIDD CREEK MINES/1985 472967/BILLITON/1984

DISCOVERY: 1981-PROSPECTING-D.JOHNSTON

CORE: NO

TPA : A1

CLAIM STATUS: STAKED DATE OF STATUS: 87 12 18

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/18/88

FALL BROOK SOUTH 21 J 15 E 46 45 18 66 32 37

COMMODITIES: MO 7/2

METALLICS: MOLYBDENITE

NON-METAL:

ALTER'N :

DEPTYPE (1): "PORPHYRY-TYPE" DEPOSITS

(2):

CHARACTER: MOLYBDENITE STRINGERS CUTTING MEDIUM-GRAINED DEVONIAN GRANITE.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: DUNGARVON GRANITE (H) AGE: DEVONIAN, LATE / DEVONIAN, LATE

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 87-55 DNR ON MAP: YES
GEOL MP 84-315 DNR ON MAP: NO

BIBLIO : 382/57-60

ASSESS :

DISCOVERY: 1986- MAPPING- K.GARNETT

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 05/18/88

FOUR MILE BROOK-VEIN 1 21 J 10 E 46 39 05 66 37 35

COMMODITIES: SN 6/1 , F 7/5

METALLICS: CASSITERITE, PYRITE

NON-METAL: QUARTZ, CHALCEDONY, K-FELDSPAR

ALTER'N : ILLITE, FLUORITE

DEPTYPE (1): INTRAMAGMATIC IN FELSIC INTRUSIONS, PEGMATITES, APLITES & FELDSPA
THIC VEINS
(2): GREISEN-STOCKWORK-VEIN

CHARACTER: QUARTZ & CASSITERITE (+/- FLUORITE & PYRITE) VEINS, APLITES AND T
IN-BEARING FELDSPAR VEINS IN MEDIUM TO COARSE-GRAINED DEVONIAN GR
ANITE. VEINS TREND 130 & ARE STEEPLY DIPPING. VEINS MAY BE LOCALL
Y BRECCIATED OR REDUCED TO FAULT GOUGE (SEEN IN BOULDER
S 200 M TO THE SW).

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: DUNGARVON GRANITE	(H) AGE:	DEVONIAN, LATE	/ DEVONIAN, LATE
TETAGOUCHE GROUP	(A) AGE:	ORDOVICIAN	/ ORDOVICIAN
TETAGOUCHE GROUP	(A) AGE:	ORDOVICIAN	/ ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: SN IN RUBBLE 200M SW OF VEIN 1 PROBABLY REPRESENTS ANOTHER VEIN-
MINRLZD RUBBLE IS 50M FROM HORNFELS

MAP REF: GEOL MP 80-55 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 382/57-60 206/

ASSESS : 473100/KIDD CREEK MINES/1985 473013/KIDD CREEK MINES/1984 472
237/AQUITAINE/1978 472461/AQUITAINE/1979

DISCOVERY: 1981-SOIL GEOCHEM- W. GARDINER

CORE: YES- FTON

TPA : A1

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/24/83

FOUR MILE BROOK W-MO 21 J 10 E 46 38 41 66 37 39

COMMODITIES: W 7/4 , MO 7/2

METALLICS: WOLFRAMITE, MOLYBDENITE, PYRITE, PYRRHOTITE

NON-METAL: QUARTZ

ALTER'N :

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: SULPHIDES & WOLFRAMITE IN QUARTZ VEINS (TO 2 CM) CUTTING HORNFELS ED ORDOVICIAN SILTSTONE APPROX 200 METRES FROM THE DUNGARVON GRAN ITE. VEINS ARE GENERALLY RANDOMLY ORIENTED.

RELATION HOST :

RELATION STRUCT:

RELATION META : VEINS WITHIN CORDIERITE-ANDALUSITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION: TETAGOUCHE GROUP (H) AGE: ORDOVICIAN ORDOVICIAN
DUNGARVON GRANITE (A) AGE: DEVONIAN / DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 80-55 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 222/ 382/57-60

ASSESS : 473013/KIDD CREEK MINES/1984

DISCOVERY: 1981-PROSPECTING- A.SANGSTER

CORE: NO

TPA : AO

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

FOUR MILE LAKE (A,B,C,D) 21 J 10 E 46 38 42 66 34 16

COMMODITIES: CU 7/2 , SN 7/6

METALLICS: CHALCOPYRITE, CASSITERITE?, PYRITE, PYRRHOTITE

NON-METAL: QUARTZ

ALTER'N :

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2): CONTACT METASOMATIC

CHARACTER: SULPHIDES AS DISSEMINATIONS & STRINGERS IN HORNFELSED ORDOVICIAN GREYWACKES & SILTSTONES. TIN OCCURS IN A CALC-SILICATE (CHERT?) H ORIZON & MAY OCCUR IN SULPHIDES OR SILICATES.

RELATION HOST :

RELATION STRUCT:

RELATION META : SHOWINGS WITHIN BIOTITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION: TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
DUNGARVON GRANITE	(A) AGE:	DEVONIAN, LATE	/ DEVONIAN, LATE

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 38 11 & 66 34 58; C= 46 38 06 & 66 36 34; D= 46 39 05 & 66 34 26.

MAP REF: GEOL MP 79-29 DNR ON MAP: NO
GEOL MP 80-55 DNR ON MAP: NO

BIBLIO : 245/ 228/ 222/

ASSESS :

DISCOVERY: C.1980-IRRINKI,GARDINER,MILLER

CORE: NO

TPA : A1

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 12/19/88

FULLERTON BROOK MO (A,B,C) 21 J 10 E 46 39 08 66 41 47

COMMODITIES: MO 7/2 , AS 7/2

METALLICS: MOLYBDENITE, ARSENOPYRITE

NON-METAL:

ALTER'N :

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: A,B= QUARTZ VEINS WITH MO & AS CUTTING HORNFELSED CAMBRO-ORDOVICIAN ARGILLITES & QUARTZITES. C= QUARTZ VEINS WITH MOLY CUTTING COARSE-GRAINED DEVONIAN GRANITE.

RELATION HOST :

RELATION STRUCT:

RELATION META : A,B ARE WITHIN CONTACT METAMORPHIC AUREOLE.

FORMATION: TETAGOUCHE GROUP (H) AGE: [illegible] / [illegible]
SISTERS BROOK GRT (H) AGE: [illegible] [illegible]

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 38 49 & 66 42 52; C= 46 38 52 & 66 41 36.

MAP REF: GEOL 6-1963 GSC ON MAP: YES
GEOL MP 80-55 DNR ON MAP: NO
BIBLIO : 222/ 230/ 225/

ASSESS :

DISCOVERY: 1963-W.H.POOLE; 1985-K.GARNETT

CORE: NO

TPA : NO

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

HARRIS BROOK (A,B) 21 J 10 E 46 42 57 66 31 33

COMMODITIES: CU 7/2 , ZN 7/2

METALLICS: CHALCOPYRITE, SPHALERITE, PYRITE

NON-METAL:

ALTER'N :

DEPTYPE (1): QUARTZ-CARBONATE VEINS AND STOCKWORKS IN FRACTURES AND/OR SHEAR ZONES
(2):

CHARACTER: STRINGER SULPHIDES CUTTING GRANITE (A) & HORNFELSED GREYWACKES (B).

RELATION HOST :

RELATION STRUCT:

RELATION META : "B" SHOWING IS WITHIN BIOTITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION: DUNGARVON GRANITE (H) AGE: DEVONIAN, LATE / DEVONIAN, LATE
TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 42 12 & 66 31 13.

MAP REF: GEOL MP 79-28 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 228/ 225/

ASSESS :

DISCOVERY: 1960- MAPPING- POOLE

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/18/88

HARRIS LAKE-A,B,C,D 21 J 10 E 46 42 33 66 32 04

COMMODITIES: SN 7/1 , F 7/5

METALLICS: CASSITERITE

NON-METAL: K-FELDSPAR

ALTER'N : ILLITE, HEMATITE, FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2): INTRAMAGMATIC IN FELSIC INTRUSIONS, PEGMATITES, APLITES & FELDSPATHIC VEINS

CHARACTER: CASSITERITE & FLUORITE IN K-FELDSPAR VEINS (A & C). FLUORITE ALSO AS VEINLETS (B) & IN FRACTURE/SHEAR ZONE (D), ALL CUTTING MEDIUM -GRAINED DEVONIAN GRANITE.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: DUNGARVON GRANITE (H) AGE: [illegible] [illegible]

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 42 34 & 66 32 01; C= 46 42 37 & 66 32 36; D= 46 41 56 & 66 33 09.

MAP REF: GEOL MP 79-28 DNR ON MAP: NO
GEOL MP 79-29 DNR ON MAP: NO

BIBLIO : 362/57-60 228/

ASSESS :

DISCOVERY: 1983-MAPPING-BILLINGS,GARDINER

CORE: NO

TPA : A1

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 05/18/88

HARRIS LAKE U 21 J 10 E 46 43 08 66 32 27

COMMODITIES: U 7/6 , F 7/5

METALLICS:

NON-METAL: U MINERALS, FLUORITE, QUARTZ

ALTER'N :

DEPTYPE (1): QUARTZ-CARBONATE VEINS AND STOCKWORKS IN FRACTURES AND/OR SHEAR ZONES
(2):

CHARACTER: A 130 -TRENDING, QUARTZ-FLUORITE BRECCIA IN DEVONIAN GRANITE HOSTS THE URANIUM. THE EARTHY BROWN-COLORED BRECCIA IS IN A FAULT/SHEAR ZONE, AT LEAST 1 METER WIDE & TRACEABLE FOR 400 METERS. A SECOND RADIOMETRIC ANOMALY EXISTS 100 METERS SE OF THE SHOWING.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: DUNGARVON GRANITE (H) AGE: DEVONIAN, LATE / DEVONIAN, LATE

ZONE/BELT: MIRAMICHI ZONE

NOTES: SEVERAL BRECCIA ZONES OCCUR IN THE AREA.

REMARKS:

MAP REF: GEOL MP 79-28 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 243/ 335/

ASSESS :

DISCOVERY: 1985-SPECTROMET-R.SHIVES (GSC)

CORE: NO

TPA : A1

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/18/88

HEAD OF LITTLE DUNGARVON-A,B,C 21 J 10 E 46 40 32 66 37 06

COMMODITIES: CU 7/2 , SN 7/6

METALLICS: CHALCOPYRITE, PYRITE

NON-METAL:

ALTER'N :

DEPTYPE (1): QUARTZ-CARBONATE VEINS AND STOCKWORKS IN FRACTURES AND/OR SHEAR ZONES
(2): GREISEN-STOCKWORK-VEIN

CHARACTER: A= SULFD STRINGERS ALONG CURVED JOINT/FRACTURE SET IN DEVONIAN GRANITE. B= TIN IN FAULT GOUGE FROM 4-MILE LAKE FAULT. C= DISSEMINATED PYRITE & CHALCOPYRITE IN BLEACHED (REDUCED) GRANITE. ALL 3 SHOWINGS ARE CLOSELY ASSOC WITH THE 4-MILE LAKE FAULT (TREND 130) AND AN INTERSECTING FAULT TRENDING N85E.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: DUNGARVON GRANITE (H) AGE: DEVONIAN DEVONIAN
TETAGOUCHE GROUP (A) AGE: ORDOVICIAN / ORDOVICIAN
TETAGOUCHE GROUP (A) AGE: ORDOVICIAN / ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: B SHOWING IS 300M ESE OF A. C SHOWING IS 600M SE OF A.

MAP REF: GEOL MP 80-55 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 222/

ASSESS : 473103/KIDD CREEK MINES LTD./1985

DISCOVERY: 1982- PROSPECTING- M. GARDINER

CORE: NO

TPA : A1

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 05/18/88

PEAKED MOUNTAIN-A,B,C 21 J 10 E 46 44 26 66 31 00

COMMODITIES: W 7/4 , MO 7/2 , F 7/5 , BE 7/3 , SN 7/1 , CU 7/2 , ZN 7/2

METALLICS: WOLFRAMITE, MOLYBDENITE, CASSITERITE, CHALCOPYRITE, SPHALERITE, PYRITE

NON-METAL: SCHEELITE, MOLYBDOSCHEELITE, BERYL, QUARTZ

ALTER'N : BIOTITE, SERICITE, FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2): QUARTZ-CARBONATE VEINS AND STOCKWORKS IN FRACTURES AND/OR SHEAR ZONES

CHARACTER: A- DISSEM SCHEEL.& MOLY BORDERING QTZ VEINS; MOLYBDOSCHEELITE AS DUSTINGS IN THE VEINS; SCHEEL IN FRACTURES; ALL IN ORDOVICIAN BASALT & GABBRO. QTZ VEINS ARE UP TO 5CM WIDE & RIMMED BY BIOTITE. B - STRINGERS OF SCHEEL IN GABBRO. C- W,MO,BE,F IN GREISEN VEINS(FLOAT) IN DEVONIAN GRANITE &LOCALLY,BASALT

RELATION HOST :

RELATION STRUCT: VEINS TREND ROUGHLY 110-120. MAX DENSITY = 4/METRE.

RELATION META : OCCURRENCES A & B- VEINS OCCUR IN CHLORITE ZONE OF CONTACT METAMORPHIC AUREOLE.

FORMATION: UNNAMED GABBRO/DIAB	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
DUNGARVON GRANITE	(A) AGE:	DEVONIAN, LATE	/ DEVONIAN, LATE

ZONE/BELT: MIRAMICHI ZONE

NOTES: PROBABLE ROGAN MORAINE OF LARGE (3 M.) BOULDERS- DIFFICULT TO EXPLORE FURTHER.

REMARKS: LOCATION B= 46 44 31 & 66 31 38; C= 46 44 04 & 66 31 18.

MAP REF: GEOL MP 79-28 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 228/ 382/57-60

ASSESS : 473102/473275/472992/KIDD CREEK MINES LTD./1985/1980/1984 47272 3/DUNGARVON RESOURCES/1981

DISCOVERY: 1983-A.LANGILLE/1984-B.MITTON

CORE: NO

TPA : A1

CLAIM STATUS: STAKED DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/18/88

PEAKED MOUNTAIN WEST 21 J 10 E 46 44 45 66 33 47

COMMODITIES: W 7/4 , F 7/5

METALLICS: PYRITE

NON-METAL: SCHEELITE, QUARTZ

ALTER'N : ILLITE, HEMATITE, FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: VEINLETS OF QUARTZ +/OR FLUORITE WITH TRACES OF SCHEELITE. VEINS CUT FINE & MEDIUM-GRAINED DEVONIAN GRANITE. PYRITE IS WEAKLY DISS EMINATED THROUGHOUT, MAINLY ALONG FRACTURES.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: DUNGARVON GRANITE (H) AGE: DEVONIAN DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 79-29 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO :

ASSESS : 472723/DUNGANNON/1981

DISCOVERY: 1981-RADIOMETRIC-DUNGANNON EXP

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

ROCKY BROOK EAST 21 J 10 E 46 39 13 66 37 40

COMMODITIES: CU 7/2

METALLICS: CHALCOPYRITE, PYRITE

NON-METAL:

ALTER'N :

DEPTYPE (1): BIMODAL VOLCANIC & SEDIMENT - HOSTED, STRATIFORM MASSIVE SULPHIDE DEPOSITS
(2):

CHARACTER: DISSEMINATED SULPHIDES ALONG LAMINATIONS & BANDS WITHIN CHERTS & SLATES.

RELATION HOST :

RELATION STRUCT:

RELATION META : WITHIN CORDIERITE/ANDALUSITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION:	TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
	TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
	DUNGARVON GRANITE	(A) AGE:	DEVONIAN, LATE	/ DEVONIAN, LATE

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 80-55 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 222/

ASSESS :

DISCOVERY: C.1976-MIRAMICHI LUMBER CO.

CORE: NO

TPA : A0

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/19/88

SISTERS BROOK (MT. ZACKLEY) 21 J 10 E 46 32 36 66 41 36

COMMODITIES: SN 7/1 , F 7/5 , W 7/4 , MO 7/2 , AS 7/2

METALLICS: CASSITERITE, WOLFRAMITE, MOLYBDENITE, PYRITE, ARSENOPYRITE

NON-METAL: QUARTZ

ALTER'N : FLUORITE, SERICITE, CHLORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: 3 TYPES: 1) GREISEN VEINS CUTTING DEVONIAN GRANITE (TO 2 CM, STRIKE SE. STEEP DIP). 2) GREISEN-BORDERED QTZ VEINS CUTTING HORNFELSED ORDOVICIAN SILTSTONES. 3) TIN IN METAGABBRO (METABASALT) TO 257 PPM. TYPE 2 CONTAINS CASSITERITE & PYRITE. TYPE 1 CONTAINS CASSITERITE & TRACES OF WOLFRAMITE & MOLY.

RELATION HOST : POSSIBLY A GRANITE CUPOLA BENEATH THE METASEDIMENTS ON MT.ZACKLEY .

RELATION STRUCT: ONE CASSITERITE-BEARING VEIN STRIKES 145/85 NE. APLITE DYKES PARALLEL BEDDING STRIKING NE.

RELATION META : EXOGRANITIC OCCURRENCES WITHIN CORDIERITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION: SISTERS BROOK GRT (H) AGE: DEVONIAN DEVONIAN
TETAGOUCHE GROUP (H) AGE: ORDOVICIAN ORDOVICIAN
TETAGOUCHE GROUP (H) AGE: ORDOVICIAN ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 80-55 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 222/ 382/57-60

ASSESS : 472597/472756/472776/SHELL CANADA/1980/1981/1981 472961/BILLITON/1983

DISCOVERY: 1978- STREAM GEOCHEM- SHELL

CORE: NO

TPA : A2

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 05/18/88

YOUNG'S DAM (A,B) 21 J 10 E 46 40 02 66 38 31

COMMODITIES: MO 7/2

METALLICS: MOLYBDENITE, PYRITE

NON-METAL:

ALTER'N : SERICITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: GREISENIZED DEVONIAN GRANITE CUT BY MOLYBDENITE STRINGERS. PYRITE AS DISSEMINATIONS.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: DUNGARVON GRANITE	(H) AGE:	DEVONIAN, LATE	/ DEVONIAN, LATE
TETAGOUCHE GROUP	(A) AGE:	ORDOVICIAN	/ ORDOVICIAN
TETAGOUCHE GROUP	(A) AGE:	ORDOVICIAN	/ ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: "B" SHOWING (46 40 16 & 66 38 15) IS PYRITIC GREISEN ONLY.

MAP REF: GEOL MP 80-55 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 382/57-60 225/ 222/

ASSESS :

DISCOVERY: 1960- POOLE, 1985- K.GARNETT

CORE: NO

TPA : A0

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/18/88

YOUNG'S DAM (C,D) 21 J 10 E 46 40 10 66 39 31

COMMODITIES: MO 7/2 , CU 7/2 , AS 7/2

METALLICS: MOLYBDENITE, CHALCOPYRITE, ARSENOPYRITE, PYRITE

NON-METAL: QUARTZ

ALTER'N :

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: SULFDS OCCUR AS STRINGERS, DISSEMINATIONS & IN QTZ VEINLETS (TO 2 CM) CUTTING HORNFELSED ORDOVICIAN MAFIC VOLCS & SILTSTONES. "C"= MOLY IN QTZ VEINLETS IN SILTSTONES INTERBEDDED WITH VOLCS; "D"= PYRITE/CHALCO STRINGERS IN SILTSTONE. SOUTH & SSW OF "C " ARE MOLY & ASP STRINGERS/DISSEMINATIONS IN VOLCS

RELATION HOST :

RELATION STRUCT:

RELATION META : MINERALIZATION WITHIN CONTACT METAMORPHIC AUREOLE.

FORMATION: DUNGARVON GRANITE (A) AGE: DEVONIAN DEVONIAN
TETAGOUCHE GROUP (H) AGE: ORDOVICIAN ORDOVICIAN
TETAGOUCHE GROUP (H) AGE: ORDOVICIAN ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: "D"= 46 40 31 & 66 40 09. 2ND MO SHOWING S OF C; AS SHOWING 775M SSW OF C.

MAP REF: GEOL MP 80-55 DNR ON MAP: MO
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 382/57-60 222/ 225/

ASSESS : 473100/473103/473017/KIDD CREEK MINES/1985/1985/1984

DISCOVERY: 1959- POOLE,B. 1981- GARDINER

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

APPENDIX III

- New Brunswick Mineral Deposits File -

Mineral occurrences associated with the Trout Lake and Rocky Brook plutons

(Locations on Plate 87-57A)

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 05/18/88

CLEARWATER/TROUT LAKE (A,B,C,D 21 J 10 E 46 35 02 66 44 47

COMMODITIES: F 7/5

METALLICS:

NON-METAL: QUARTZ, K-FELDSPAR

ALTER'N : FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: A,C,D= FLUORITE (+/- QUARTZ) VEINLETS CUTTING DEVONIAN GRANITE- M AY REPRESENT FRACTURE/FAULT ZONES. B= FELDSPAR VEIN WITH DISSEMIN ATED & STRINGER FLUORITE CUTTING GRANITE. ALL TREND ROUGHLY 130 D EGREES.

RELATION HOST :

RELATION STRUCT:

RELATION META :

FORMATION: TROUT BROOK GRANITE (H) AGE: DEVONIAN / DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 34 47 & 66 43 49; C= 46 33 44 & 66 43 28; D= 46 33 59 & 66 41 38.

MAP REF: GEOL MP 80-56 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 230/ 222/ 225/

ASSESS :

DISCOVERY: 1960- POOLE; 1979- IRRINKI

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/19/88

DEADMAN BROOK GREISEN (A,B) 21 J 10 E 46 33 23 66 44 38

COMMODITIES:

METALLICS: PYRITE

NON-METAL:

ALTER'N : SERICITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: GREISENIZED DEVONIAN GRANITE & APLITE DYKES CUTTING HORNFELSED ORDOVICIAN GREYWACKES. PYRITE IS DISSEMINATED IN BOTH GREISENS.

RELATION HOST :

RELATION STRUCT:

RELATION META : APLITE DYKES WITHIN CORDIERITE-ANDALUSITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION: TROUT BROOK GRANITE (H) AGE: DEVONIAN / DEVONIAN
UNNAMED APLITE DYKES (H) AGE: DEVONIAN / DEVONIAN
TETAGOUCHE GROUP (A) AGE: ORDOVICIAN / ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 33 21 & 66 45 11. LOCATION B SAMPLED BY MIRAMICHI L.C. IN 1986- ASSAYS NOT YET FILED.

MAP REF: GEOL MP 80-56 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 230/ 222/

ASSESS :

DISCOVERY: PRE-1985-CROSBY; 1986-GARDINER

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

FALLS BROOK (A,B) 21 J 10 E 46 36 25 66 36 00

COMMODITIES: SN 7/1 , CU 7/2

METALLICS: CASSITERITE, CHALCOPYRITE, PYRRHOTITE

NON-METAL: QUARTZ, SPHENE

ALTER'N : ACTINOLITE, EPIDOTE, DIOPSIDE, CHLORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: "A" SHOWING = CASSITERITE IN QUARTZ & QUARTZ-FELDSPAR-ACTINOLITE VEINS CUTTING BLEACHED ORDOVICIAN GREYWACKE. VEINLETS TREND 130/90. "B" SHOWING = CHALCOPYRITE-PYRRHOTITE STRINGERS CUTTING CALC-SILICATE HORNFELS (CHERT-LIKE). TIN MAY BE IN SULPHIDES OR CALC-SILICATES.

RELATION HOST : CALC-SILICATE UNIT CAN BE TRACED FOR 2 KM WITH TIN CONTENT RANGING FROM 69-443 PPM.

RELATION STRUCT: DOMINANT STRUCTURAL TREND (FAULTS, FRACTURES, JOINTS) IS 130 DEGREES.

RELATION META : OCCURRENCES ARE WITHIN THE BIOTITE ISOGRAD OF THE CONTACT METAMORPHIC AUREOLE.

FORMATION: TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
ROCKY BROOK GRANITE	(A) AGE:	DEVONIAN	/ DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 36 35 & 66 36 03.

MAP REF: GEOL MP 80-55 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 222/ 382/57-60 206/

ASSESS : 473003/472938/472848/KIDD CREEK MINES LTD./1984/1983/1982 47246
5/COMINCO/1979

DISCOVERY: 1981- PROSPECTING- W.GARDINER

CORE: NO

TPA : A1

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/19/88

GILMAN BROOK FLUORITE (A,B) 21 J 10 E 46 36 04 66 40 20

COMMODITIES: F 7/5

METALLICS: PYRITE

NON-METAL:

ALTER'N : FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: A= FLUORITE VEIN CUTTING DEVONIAN GRANITE. B= FLUORITE & PYRITE I N A WIDE SHEAR ZONE AT THE INTERSECTION OF 2 FAULTS IN GRANITE. T HE E-W FAULT IS 1-2 M WIDE, MARKED BY A ZONE OF QUARTZ-CEMENTED B RECCIA. THE NW-SE FAULT IS A 50-100 M WIDE FRACTURE ZON E AND IS PROBABLY THE YOUNGER OF THE TWO.

RELATION HOST :

RELATION STRUCT: B SHOWING- FAULTS TREND 85 & 130 DEGREES.

RELATION META :

FORMATION: TROUT BROOK GRANITE (H) AGE: DEVONIAN / DEVONIAN
TETAGOUCHE GROUP (A) AGE: ORDOVICIAN / ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 35 59 & 66 39 57.

MAP REF: GEOL MP 80-55 DNR ON MAP: YES
GEOL MP 80-56 DNR ON MAP: NO

BIBLIO : 322/ 230/

ASSESS :

DISCOVERY: 1980- IRRINKI, 1986- GARDINER

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

MOLASSES BROOK 21 J 10 E 46 36 15 66 44 45

COMMODITIES:

METALLICS: PYRITE

NON-METAL:

ALTER'N :

DEPTYPE (1): STRATIFORM SEDIMENT - HOSTED BASE METAL SULPHIDE DEPOSITS DISTAL TO VOLCANIC SOURCE
(2):

CHARACTER: MASSIVE BEDDED PYRITE IN ORDOVICIAN CHERT & ARGILLITE ADJACENT TO BASALT. THIS OCCURRENCE IS SITUATED APPROX HALF-WAY BETWEEN THE BURNTHILL AND TROUT BROOK STOCKS.

RELATION HOST :

RELATION STRUCT:

RELATION META : WITHIN CONTACT METAMORPHIC AUREOLE, BUT NO INTRUSION IS EXPOSED.

FORMATION: TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
TETAGOUCHE GROUP (A) AGE: ORDOVICIAN / ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 80-55 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 222/

ASSESS : 473084/BRUNSWICK M & S/1984

DISCOVERY: C.1983-PROSPECTING-K.WHALEY

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/19/88

ROCKY BROOK CAMPS 21 J 10 E 46 36 08 66 37 26

COMMODITIES: W 7/4

METALLICS: WOLFRAMITE

NON-METAL: QUARTZ

ALTER'N :

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: WOLFRAMITE CRYSTALS TO 2 CM OCCUR IN QUARTZ VEINS TO 5 CM WIDTH. VEINS HAVE THIN GREISEN SELVEDGES. THEY CUT ORDOVICIAN GREYWACKE/ SILTSTONE, APPROX 500FT FROM THE DEVONIAN TROUT BROOK GRANITE.

RELATION HOST :

RELATION STRUCT:

RELATION META : VEINS WITHIN CORDIERITE/ANDALUSITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION: TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
TROUT BROOK GRANITE (A) AGE: DEVONIAN / DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: NUMEROUS MINERALIZED BOULDERS IN AREA. SIMILAR VEINS APPROX 400 F T TO THE NNW.

MAP REF: GEOL MP 80-55 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 222/ 332/57-60

ASSESS : 472334/472525/MIRAMICHI LUMBER CO./1979/1980

DISCOVERY: C.1978- MIRAMICHI LUMBER CO.

CORE: NO

TPA : A0

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

ROCKY BROOK FLUORITE 21 J 10 E 46 36 55 66 37 33

COMMODITIES: F 7/5

METALLICS: PYRITE

NON-METAL: QUARTZ

ALTER'N : FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: FLUORITE OCCURS IN FRACTURE &/OR BRECCIA ZONES AS MATRIX &/OR CLA STS IN ASSOCIATION WITH CHALCEDONIC QUARTZ AS MATRIX &/OR CLASTS. FRACTURE/ BRECCIA ZONES TREND 120-140 & ARE UP TO 100 METERS WID E (4B LOCATION) OF WHICH 1.5 METERS CAN BE 100% FLUORIT E (4A LOCATION). VEINS ARE FREQUENTLY MIAROLITIC.

RELATION HOST : MOST VEINS ARE ENDOGRANITIC. THE EXOGRANITIC VEINS ARE SMALLER (1 -3 CM WIDE). HOST ROCKS ARE QTZ MONZONITE, GREYWACKE/SILTSTONE AN D MAFIC VOLCS.

RELATION STRUCT:

RELATION META : EXOGRANITIC VEINS ARE WITHIN BIOTITE ISOGRAD OF CONTACT METAMORPH IC AUREOLE. GREISENIZATION & DISSEM PYRITE ARE LOCALLY ASSOC WITH ENDOGRANITIC VEINS.

FORMATION:	ROCKY BROOK GRANITE	(H) AGE:	DEVONIAN	/ DEVONIAN
	TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
	TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION IS FOR 4A. 15 OTHER OCCURRENCES ARE LOCATED ON MAP IN NB MINERAL OCCURR FILE 21J/10E-4.

MAP REF: GEOL MP 80-55 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 222/ 231/ 230/

ASSESS : 473014/KIDD CREEK MINES LTD./1984

DISCOVERY: 1963-86 POOLE/IRRINKI/GARDINER

CORE: NO

TPA : A0

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/19/88

ROCKY BROOK SOUTH (A,B,C) 21 J 10 E 46 37 26 66 37 28

COMMODITIES: SN 7/1 , MO 7/2 , BI 7/2 , W 7/4 , F 7/5

METALLICS: CASSITERITE, MOLYBDENITE, BISMUTHINITE, WOLFRAMITE, PYRITE

NON-METAL: QUARTZ, K-FELDSPAR

ALTER'N : SERICITE, ANHYDRITE, FLUORITE, HEMATITE, ILLITE, KAOLINITE

DEPTYPE (1): "PORPHYRY-TYPE" DEPOSITS

(2): GREISEN-STOCKWORK-VEIN

CHARACTER: A= QUARTZ VEIN (30CM WIDE) CONTAINING FELDSPAR-CASSITERITE SEGREGATIONS IN DEVONIAN GRANITE. B= QUARTZ STOCKWORK CONTAINING MOLYBDENITE & BISMUTHINITE. C= GREISENIZED GRANITE WITH QUARTZ VEINS CONTAINING WOLFRAMITE (TO 1CM) & MOLYBDENITE.

RELATION HOST : VEINS CUT GRANITE. FELDSPAR CONTENT OF VEINS SUGGESTS LATE MAGMATIC TO EARLY HYDROTHERMAL ORIGIN OF VEINS.

RELATION STRUCT: DOMINANT 130 (120-140)-TRENDING VEIN/JOINT/FRACTURE DIRECTION.

RELATION META :

FORMATION: ROCKY BROOK GRANITE (H) AGE: DEVONIAN DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 36 45 & 66 37 29: C= 46 36 58 & 66 37 08. SEVERAL OTHER OCCURRENCES IN AREA.

MAP REF: GEOL MP 80-55 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 222/ 382/57-60 206/

ASSESS : 473014/472949/KIDD CREEK MINES/1984/1983 472750/472514/472452/TEXASGULF/1981/1980/1979

DISCOVERY: 1978-MAPPING-GARDINER/JANSEN

CORE: NO

TPA : A1

CLAIM STATUS: MINING DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

SISTERS BROOK (A,B) 21 J 10 E 46 36 44 66 39 42

COMMODITIES: W 7/4 , F 7/5

METALLICS: WOLFRAMITE

NON-METAL: QUARTZ

ALTER'N : FLUORITE, SERICITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: A= WOLFRAMITE & FLUORITE IN QUARTZ VEINS CUTTING HORNFELSED ORDOVICIAN GREYWACKE. B= WOLFRAMITE IN GREISEN-BORDERED QUARTZ VEINS (TO 2 CM) CUTTING GREYWACKE. VEINS TREND 120-140.

RELATION HOST :

RELATION STRUCT:

RELATION META : VEINS WITHIN BIOTITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION: TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
TROUT BROOK GRANITE (A) AGE: DEVONIAN / DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION OF B SHOWING = 44 36 59 & 66 40 11.

MAP REF: GEOL MP 80-55 DNR ON MAP: YES
GEOL 6-1963 GSC ON MAP: YES
BIBLIO : 382/57-60 222/ 225/

ASSESS :

DISCOVERY: 1960- POOLE, 1979- IRRINKI

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/19/88

SISTERS MOUNTAIN (3A) 21 J 10 E 46 36 27 66 39 1

COMMODITIES: CU 7/2 , ZN 7/2 , AS 7/2 , F 7/5

METALLICS: CHALCOPYRITE, SPHALERITE, ARSENOPYRITE, PYRITE

NON-METAL: QUARTZ

ALTER'N : FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: 1-5 CM WIDE QUARTZ VEINS CUTTING HORNSFELSED ORDOVICIAN SEDIMENTS . VEINS ARE TYPICALLY MIAROLITIC & STRIKE 110-130, DIPPING STEEPLY. SOME VEINS SHOW EVIDENCE OF BRECCIATION (TECTONIC). HOST ROCKS ARE GREYWACKES & MINOR SILTSTONES.

RELATION HOST :

RELATION STRUCT:

RELATION META : VEINS CUT CONTACT METAMORPHIC AUREOLE & ARE WITHIN THE BIOTITE I OGRAD.

FORMATION: TETAGOUCHE GROUP (H) AGE: ORDOVICIAN ORDOVICIAN
TROUT BROOK GRANITE (A) AGE: DEVONIAN DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: 3B= 46 36 34 & 66 38 48; 6A= 46 36 35 & 66 39 21.

MAP REF: GEOL MP 80-55 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 231/ 222/

ASSESS : 473014/KIDD CREEK MINES LTD./1984

DISCOVERY: 1963-W.POOLE, 1978-W.GARDINER

CORE: NO

TPA : AO

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 05/18/88

SOUTHWEST MIRAMICHI PB-F 21 J 10 E 46 35 56 66 36 09

COMMODITIES: F 7/5 , PB 7/2

METALLICS: GALENA, PYRITE

NON-METAL:

ALTER'N : FLUORITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: FLUORITE & GALENA OCCUR IN HORNFELSED GREYWACKES 2.2 KM BELOW THE MOUTH OF ROCKY BROOK. FLUORITE ALSO OCCURS IN A FRACTURE ZONE IN GRANITE NEAR THE HORNFELS CONTACT 750 M BELOW THE MOUTH OF ROCKY BROOK. THE LATTER OCCURRENCE IS LOCALLY A BRECCIA AND HAS LARGE MIAROLITIC CAVITIES. PYRITE IS DISSEM.

RELATION HOST :

RELATION STRUCT:

RELATION META : EAST SHOWING IS WITHIN BIOTITE ISOGRAD OF CONTACT METAMORPHIC AUR EOLE.

FORMATION: TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
TROUT BROOK GRANITE (H) AGE: DEVONIAN / DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: WEST OCCURRENCE = 46 35 47 & 66 37 20.

MAP REF: GEOL MP 80-56 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 222/ 225/10 230/

ASSESS :

DISCOVERY: 1963-POOLE/1985-GARDINER(WEST)

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/19/88

THREE MILE LAKE 21 J 10 E 46 37 35 66 40 56

COMMODITIES: CU 7/2

METALLICS: CHALCOPYRITE, PYRITE, PYRRHOTITE

NON-METAL:

ALTER'N :

DEPTYPE (1): BIMODAL VOLCANIC & SEDIMENT - HOSTED STRATIFORM MASSIVE SULPHIDE DEPOSITS
(2):

CHARACTER: DISSEMINATED SULPHIDES OCCUR ALONG LAMINATIONS & BANDS WITHIN TET AGOUCHE GROUP CHERTS AND SLATES.

RELATION HOST :

RELATION STRUCT:

RELATION META : WITHIN BIOTITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION: TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
ROCKY BROOK GRANITE (A) AGE: DEVONIAN / DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: SEVERAL PYRITE &/OR PYRRHOTITE SHOWINGS OCCUR IN THE AREA.

MAP REF: GEOL MP 80-55 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?
BIBLIO : 222/

ASSESS :

DISCOVERY: PRE-1981

CORE: NO

TPA : AO

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 05/18/88

TODD MOUNTAIN-A,B,C 21 J 10 E 46 32 35 66 42 00

COMMODITIES: SN 6/1 , CU 7/2 , PB 7/2 , ZN 7/2 , AG 7/6 , AU 7/1 , AS 7/2

METALLICS: CASSITERITE, CHALCOPYRITE, GALENA, SPHALERITE, PYRITE, PYRRHOTITE , ARSENOPYRITE, SILVER, GOLD, MAGNETITE

NON-METAL: QUARTZ, GRAPHITE

ALTER'N : CHLORITE, MUSCOVITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: SULFDS OCCUR AS NODULES, DISSEMINATIONS & STRINGERS ASSOC WITH QTZ & CHLORITE. CASSITERITE AS DISSEMINATIONS ASSOC WITH QUARTZ-CHLORITE-ARSENOPYRITE-MUSCOVITE IN JOINTS. HOST RKS ARE (PARTLY BLEACHED) PYRITIC & GRAPHITIC SILTSTONE & FINE CALC-SILICATE HORNFELS ('CHERT') OVERLYING ARGILLITE & QTZITE.

RELATION HOST :

RELATION STRUCT: BEDDING/CLEAVAGE STRIKE NE & DIP 60-90 SE. JOINTS ARE 120/80N. AT FIRE TOWER (A OCCURRENCE) JOINTS ARE 1-2 CM APART OVER SEVERAL HUNDRED METRES.

RELATION META : WITHIN CONTACT AUREOLE (BETWEEN ANDALUSITE & BIOTITE ISOGRADS) OF TROUT BROOK GRANITE. THERE MAY BE A CUPOLA AT DEPTH.

FORMATION:				
TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
TETAGOUCHE GROUP	(H) AGE:	ORDOVICIAN	/ ORDOVICIAN
TROUT BROOK GRANITE	(A) AGE:	DEVONIAN	/ DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION B= 46 33 16 & 66 41 42; C= 46 32 10 & 66 42 18. 5 DDHS BY BILLITON NOT FILED FOR ASSESSMENT

MAP REF: GEOL MP 80-56 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 206/ 222/27 225/9 106/5

ASSESS : 472500/MIRAMICHI LUMBER CO./1974 472501/MIRAMICHI LUMBER CO./1975 472502/MIRAMICHI LUMBER CO./1976 472120/MIRAMICHI LUMBER / 1977 472871/SHELL CANADA/1982 472961/BILLITON/1983

DISCOVERY: PRE-1963

CORE: NO

TPA : A1

CLAIM STATUS: OPEN DATE OF STATUS: 87 06 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/19/88

TODD MOUNTAIN NW 21 J 10 E 46 32 44 66 42 22

COMMODITIES: W 7/4 , MO 7/2

METALLICS: WOLFRAMITE, MOLYBDENITE

NON-METAL: TOURMALINE, QUARTZ

ALTER'N :

DEPTYPE (1): QUARTZ-CARBONATE VEINS AND STOCKWORKS IN FRACTURES AND/OR SHEAR ZONES
(2): GREISEN-STOCKWORK-VEIN

CHARACTER: WOLFRAMITE WITH MINOR MOLY AND TOURMALINE IN A QTZ VEIN CUTTING ORDOVICIAN SILTSTONE/SLATE METAMORPHOSED TO BIOTITE HORNFELS. THE DEVONIAN TROUT BROOK GRANITE LIES 1/2 MILE TO THE NORTH.

RELATION HOST :

RELATION STRUCT:

RELATION META : BETWEEN BIOTITE AND ANDALUSITE ISOGRADS PRODUCED BY TROUT BROOK GRANITE.

FORMATION: TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
TROUT BROOK GRANITE (A) AGE: DEVONIAN / DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 80-56 DNR ON MAP: NO
GEOL 6-1963 GSC ON MAP: ?
BIBLIO : 222/ 225/ 106/

ASSESS : 472871/SHELL CANADA/1982

DISCOVERY: 1939- PROSPECTING- PROV OF NB

CORE: NO

TPA : AØ

CLAIM STATUS: OPEN DATE OF STATUS: 87 07 01

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 05/18/88

TROUT LAKE PLUTON EAST (A,B,C) 21 J 10 E 46 35 26 66 37 43

COMMODITIES: SN 6/1 , W 7/4 , ZN 7/2 , CU 7/2 , MO 7/2 , F 7/5 , BE 7/3 , BI 7/2 , AS 7/2 , AG 7/6 , AU 7/1

METALLICS: CASSITERITE, WOLFRAMITE, SPHALERITE, CHALCOPYRITE, MOLYBDENITE, BISMUTHINITE, ARSENOPYRITE, SILVER, GOLD, PYRITE, HEMATITE, MAGNETITE

NON-METAL: BERYL, QUARTZ, K-FELDSPAR

ALTER'N : FLUORITE, SERICITE, CHLORITE, ILLITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2): INTRAMAGMATIC IN FELSIC INTRUSIONS, PEGMATITES, APLITES & FELDSPATHIC VEINS

CHARACTER: GREISEN-BORDERED QUARTZ VEINS IN DEVONIAN GRANITE TREND SE (LOCALLY NE) AND INCREASE IN ABUNDANCE & WIDTH TOWARD HORNFELS CONTACT. GRANITE IS VARIABLY GREISENIZED BETWEEN VEINS- LOCAL INTENSELY GREISENIZED PODS. K-FELDSPAR (+/- CASSITERITE) VEINS ALSO OCCUR IN THE AREA.

RELATION HOST : VEINS ARE MOST ABUNDANT IN THE FINE- TO MEDIUM-GRAINED PHASE OF THE GRANITE.

RELATION STRUCT: STRONGLY CONTROLLED BY 130-TRENDING JOINTS/ FRACTURES & NE-TRENDING HORNFELS CONTACT.

RELATION META :

FORMATION: TROUT LAKE GRANITE (H) AGE: DEVONIAN / DEVONIAN
TETAGOUCHE GROUP (A) AGE: ORDOVICIAN / ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES: GOLD UP TO 225 PPB IN ASSOC WITH ARSENOPYRITE. AREA OF MINERALIZATION IS 1500 X 500 M.

REMARKS: LOCATION B= 46 35 04 & 66 38 05; C= 46 35 42 & 66 38 06. ALL ARE GENERAL LOCATIONS.

MAP REF: GEOL MP 80-56 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 382/57-60 222/

ASSESS : 473242/KIDD CREEK MINES/1986

DISCOVERY: 1984- MAPPING- L.JENSEN

CORE: NO

TPA : A1

CLAIM STATUS: STAKED DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/19/88

TROUT LAKE PLUTON SE (A,B) 21 J 10 E 46 34 24 66 39 52

COMMODITIES: SN 7/1 , CU 7/2 , MO 7/2 , AS 7/2

METALLICS: CASSITERITE, CHALCOPYRITE, BORNITE, MOLYBDENITE, ARSENOPYRITE, PYRITE

NON-METAL: QUARTZ

ALTER'N : MUSCOVITE, HEMATITE

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: A= DISSEMINATED ARSENOPYRITE & PYRITE IN HEMATICALLY-ALTERED DEVONIAN GRANITE. B= QUARTZ +/- MUSCOVITE GREISEN IN GRANITE WITH SN, CU & MO DISSEMINATIONS- ZONE AT LEAST 5 M THICK PARALLELLING HORNFELS-GRANITE CONTACT.

RELATION HOST :

RELATION STRUCT: MAY BE CONTROLLED BY HORNFELS CONTACT.

RELATION META :

FORMATION: TROUT LAKE GRANITE (H) AGE: DEVONIAN / DEVONIAN
TETAGOUCHE GROUP (A) AGE: ORDOVICIAN / ORDOVICIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: LOCATION A= 46 34 25 & 66 39 58.

MAP REF: GEOL MP 80-56 DNR ON MAP: NO
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 230/ 222/

ASSESS : 473242/KIDD CREEK MINES/1986

DISCOVERY: 1984-GARDINER/CARROLL/JENSEN

CORE: NO

TPA : A1

CLAIM STATUS: STAKED DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE

DATE: 05/18/88

TROUT BROOK- UPPER 21 J 10 E 46 34 11 66 40 32

COMMODITIES: CU 7/2

METALLICS: CHALCOPYRITE, PYRITE, PYRRHOTITE

NON-METAL:

ALTER'N :

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2): QUARTZ-CARBONATE VEINS AND STOCKWORKS IN FRACTURES AND/OR SHEAR ZONES

CHARACTER: SULPHIDES IN QUARTZ STRINGERS CUTTING HORNFELSED ORDOVICIAN CONGLOMERATE.

RELATION HOST :

RELATION STRUCT:

RELATION META : VEINS WITHIN CORDIERITE-ANDALUSITE ISOGRAD OF CONTACT METAMORPHIC AUREOLE.

FORMATION: TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
TROUT BROOK GRANITE (H) AGE: DEVONIAN / DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS:

MAP REF: GEOL MP 80-56 DNR ON MAP: YES
GEOL MP 84-311 DNR ON MAP: ?

BIBLIO : 225/10 222/27

ASSESS :

DISCOVERY: C.1960- MAPPING- W.H.POOLE

CORE: NO

TPA : A0

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

NEW BRUNSWICK MINERAL DEPOSITS FILE
****

DATE: 02/19/88

TROUT BROOK- LOWER (A-E) 21 J 10 E 46 34 23 66 37 49

COMMODITIES: CU 7/2 , PB 7/2 , ZN 7/2 , AS 7/2 , AG 7/6

METALLICS: CHALCOPYRITE, GALENA, SPHALERITE, PYRITE, PYRRHOTITE, ARSENOPYRITE, SILVER

NON-METAL: QUARTZ

ALTER'N :

DEPTYPE (1): GREISEN-STOCKWORK-VEIN

(2):

CHARACTER: QUARTZ STRINGERS WITH SULPHIDES CUT ORDOVICIAN SILTSTONES; DISSEMINATED SULFDS OCCUR ALONG LAMINATIONS AND BANDS IN CHERTS & SLATES; MASSIVE FINE-GRAINED PYRITE & PYRRHOTITE REPLACE A FEW THIN BEDS OF HORNFELS.

RELATION HOST :

RELATION STRUCT:

RELATION META : MINERALIZATION IS WITHIN THE BIOTITE ISOGRAD OF A CONTACT METAMORPHIC AUREOLE.

FORMATION: TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
TETAGOUCHE GROUP (H) AGE: ORDOVICIAN / ORDOVICIAN
TROUT BROOK GRANITE (A) AGE: DEVONIAN / DEVONIAN

ZONE/BELT: MIRAMICHI ZONE

NOTES:

REMARKS: 'B'=46 34 24 & 66 38 18; 'C'=46 34 06 & 66 38 18; 'D'=46 34 21 & 66 37 13; 'E'=46 34 26 & 66 36 56.

MAP REF: GEOL MP 80-56 DNR ON MAP: YES
GEOL 19-1960 GSC ON MAP: ?
BIBLIO : 225/9-10 222/27

ASSESS : 472502/MIRAMICHI LUMBER CO./1976

DISCOVERY: C.1960- MAPPING- W.H.POOLE

CORE: NO

TPA : A1

CLAIM STATUS: OPEN DATE OF STATUS: 87 03 02

APPENDIX IV

Analytical methods and detection limits

ELEMENTS	METHOD	DETECTION LIMIT
Maj. & Min.	XRF	0.01 %
S	XRF	100 ppm
V	DCP	10 ppm
Au	FA/DCP	1 ppb
Li	AA	10 ppm
Be	DCP	5 ppm
B	DCP	10 ppm
Cr	DCP	2 ppm
Mn	DCP	2 ppm
Co	ICP/MS	1 ppm
Ni	DCP	1 ppm
Cu	DCP	0.5 ppm
Zn	DCP	0.5 ppm
Ga	ICP/MS	1 ppm
Ge	DCP	10 ppm
As	FAA	1 ppm
Se	GFAA	3 ppm
Mo	ICP/MS	2 ppm
Ag	DCP	0.5 ppm
Cd	DCP	1 ppm
In	ICP/MS	1 ppm
Sn	XRF	10 ppm
Sb	FAA	0.2 ppm
Cs	ICP/MS	1 ppm
La	ICP/MS	2 ppm
Ce	ICP/MS	1 ppm
Nd	ICP/MS	0.5 ppm
Sm	ICP/MS	0.5 ppm
Eu	ICP/MS	0.1 ppm
Cd	ICP/MS	0.5 ppm
Dy	ICP/MS	0.5 ppm
Er	ICP/MS	0.5 ppm
Lu	ICP/MS	0.1 ppm
Hf	ICP/MS	1 ppm
Ta	ICP/MS	1 ppm
W	ICP/MS	3 ppm
Tl	ICP/MS	1 ppm
Pb	DCP	2 ppm
Bi	ICP/MS	0.5 ppm
Th	ICP/MS	1 ppm
U	ICP/MS	0.5 ppm

AA = atomic absorbtion
DCP = double couple plasma
FAA = flameless atomic absorption
FA/DCP = fire assay/double couple plasma
GFAA = graphite furnace atomic absorption
ICP/MS = inductively coupled plasma/mass spectrometer
XRF = X-ray fluorescence

All analytical work performed by X-Ray Assay Laboratories of Don Mills, Ontario

TABLES 1 to 18

TABLE 1

AVERAGE CHEMICAL ANALYSES OF THE BURNTHILL PLUTON

	UNIT 1 (n = 1)	UNIT 2 (n = 7)	UNIT 3 (n = 4)	UNIT 4 (n = 6)
SiO_2	71.44	75.63 (73.95-77.28)	76.25 (75.58-76.72)	77.55 (76.55-78.82)
TiO_2	0.33	0.18 (0.12- 0.23)	0.14 (0.07- 0.21)	0.09 (0.03- 0.18)
Al_2O_3	14.69	12.93 (12.42-13.42)	12.84 (12.50-13.31)	12.33 (11.16-12.98)
Fe_2O_3	2.41	1.46 (1.21- 1.66)	1.38 (0.97- 1.58)	0.88 (0.43- 1.12)
MnO	0.10	0.06 (0.05- 0.06)	0.07 (0.05- 0.09)	0.04 (0.02- 0.06)
MgO	0.83	0.30 (0.15- 0.40)	0.27 (0.15- 0.39)	0.14 (0.06- 0.32)
CaO	2.08	0.80 (0.35- 1.17)	0.60 (0.43- 0.72)	0.44 (0.24- 0.74)
Na_2O	3.57	3.44 (3.15- 4.09)	3.58 (3.35- 3.93)	3.46 (2.70- 4.03)
K_2O	4.03	4.67 (4.28- 4.83)	4.51 (4.41- 4.68)	4.71 (4.06- 5.29)
P_2O_5	0.08	0.05 (0.01- 0.07)	0.04 (0.01- 0.08)	0.02 (0 - 0.06)
Ba	514	183 (84- 262)	134 (47- 228)	73 (19- 156)
Rb	295	405 (354- 488)	476 (365- 581)	395 (235- 564)
Sr	319	61 (19- 99)	39 (9- 70)	23 (4- 63)
Zr	150	119 (102- 131)	94 (61- 135)	76 (43- 116)
Nb	8	22 (13- 34)	27 (20- 35)	30 (11- 51)
Y	29	62 (47- 88)	59 (36- 82)	57 (29- 82)
Zn	66	33 (14- 46)	47 (34- 65)	48 (12- 126)
Ni	1	3 (0- 4)	12 (1- 40)	3 (2- 6)
Cr	22	13 (3- 16)	15 (12- 17)	14 (4- 18)
V	26	5 (0- 10)	1 (0- 1)	0 (0- 1)
F	2430	720 (90-1085)	939 (510-1530)	160 (70- 430)
Sn	31	16 (13- 22)	18 (9- 27)	10 (1- 17)

TABLE 2

AVERAGE CHEMICAL ANALYSES OF THE DUNGARVON PLUTON

	UNIT 1 (n = 2)	UNIT 2 (n = 2)	UNIT 3 (n = 3)	UNIT 4 (n = 3)
SiO_2	74.02 (73.71-74.34)	74.12 (73.76-74.49)	76.61 (76.21-76.91)	76.90 (75.98-77.92)
TiO_2	0.24 (0.20- 0.28)	0.28 (0.27- 0.28)	0.09 (0.08- 0.12)	0.09 (0.06- 0.14)
Al_2O_3	13.84 (13.75-13.94)	13.65 (13.65-13.82)	12.58 (12.51-12.64)	12.74 (12.40-13.26)
Fe_2O_3	1.76 (1.45- 2.07)	2.20 (2.16- 2.25)	1.08 (0.96- 1.28)	1.15 (0.84- 1.37)
MnO	0.06 (0.05- 0.06)	0.07 (0.07)	0.04 (0.04)	0.05 (0.04- 0.06)
MgO	0.43 (0.18- 0.68)	0.63 (0.63)	0.03 (0 - 0.07)	0.20 (0 - 0.37)
CaO	1.08 (0.74- 1.41)	1.28 (1.27- 1.28)	0.41 (0.39- 0.42)	0.55 (0.18- 0.95)
Na_2O	3.40 (3.29- 3.50)	3.68 (3.61- 3.76)	3.79 (3.72- 3.87)	3.57 (3.42- 3.73)
K_2O	4.84 (4.47- 5.22)	4.31 (4.24- 4.38)	4.64 (4.60- 4.71)	4.76 (4.70- 4.80)
P_2O_5	0.11 (0.07- 0.15)	0.09 (0.08- 0.10)	0.03 (0.01- 0.05)	0.01 (0 - 0.03)
Ba	338 (271- 406)	239 (238- 240)	87 (74- 93)	101 (72-125)
Rb	335 (296- 374)	274 (254- 295)	394 (391-399)	380 (330-476)
Sr	90 (48- 132)	132 (121- 143)	17 (15- 20)	29 (11- 58)
Zr	122 (94- 151)	150 (147- 153)	26 (77- 82)	84 (62- 96)
Nb	16 (16- 17)	15 (14- 16)	36 (22- 28)	20 (16- 23)
Y	38 (31- 44)	43 (37- 48)	61 (59- 63)	53 (42- 61)
Zn	132 (25- 238)	44 (39- 50)	21 (6- 39)	44 (34- 59)
Ni	0 (0)	0 (0)	0 (0)	0 (0)
Cr	15 (9- 22)	15 (10- 19)	16 (14- 19)	14 (13- 16)
V	2 (0- 3)	8 (8- 9)	4 (0- 11)	2 (0- 7)
F	1332 (1090-1575)	607 (505- 710)	295 (100-490)	427 (100-980)
Sn	26 (22- 30)	16 (16- 17)	14 (6- 21)	33 (6- 82)

TABLE 3

AVERAGE CHEMICAL ANALYSES OF THE TROUT LAKE PLUTON

	UNIT 1 (n = 2)	UNIT 2 (n = 3)	UNIT 3 (n = 4)
SiO_2	72.20 (71.73-72.66)	74.04 (73.59-74.62)	76.12 (75.27-76.71)
TiO_2	0.26 (0.25- 0.26)	0.17 (0.15- 0.21)	0.09 (0.04- 0.16)
Al_2O_3	15.06 (14.55-15.57)	13.41 (13.34-13.55)	12.59 (12.33-12.77)
Fe_2O_3	1.94 (1.93- 1.95)	2.04 (1.86- 2.26)	1.80 (1.11- 2.89)
MnO	0.09 (0.05- 0.13)	0.07 (0.06- 0.09)	0.09 (0.05- 0.18)
MgO	0.56 (0.52- 0.59)	0.11 (0.01- 0.28)	0.02 (0 - 0.10)
CaO	1.80 (1.65- 1.95)	0.92 (0.79- 1.06)	0.44 (0.31- 0.67)
Na_2O	4.69 (4.29- 5.09)	3.52 (3.37- 3.61)	3.25 (2.70- 3.59)
K_2O	2.82 (2.30- 3.33)	4.78 (4.48- 4.90)	4.45 (3.88- 4.87)
P_2O_5	0.08 (0.07- 0.08)	0.04 (0.03- 0.06)	0.04 (0.01- 0.09)
Ba	336 (323- 350)	255 (207- 333)	122 (60- 182)
Rb	196 (157- 236)	375 (355- 406)	474 (369- 570)
Sr	570 (526- 615)	77 (45- 119)	20 (11- 31)
Zr	130 (120- 139)	151 (114- 158)	87 (54- 138)
Nb	6 (5- 8)	17 (15- 18)	17 (14- 19)
Y	21 (19- 23)	43 (39- 47)	54 (44- 58)
Zn	61 (47- 75)	39 (30- 55)	189 (35- 639)
Ni	0 (0)	0 (0)	1 (0- 3)
Cr	20 (20- 21)	10 (7- 13)	12 (8- 16)
V	13 (8- 18)	2 (1- 6)	1 (0- 2)
F	918 (435-1400)	1220 (850-1765)	851 (290-1555)
Sn	26 (14- 39)	34 (14- 38)	35 (17- 77)

TABLE 4

SAMPLE DESCRIPTIONS - BURNTHILL GRANITE
(Plate 86-241A; Tables 7 to 10)

85-BH-48	Red miarolitic feldspathic float
85-BH-129B,C	Silicified granite breccia with narrow quartz-filled fractures containing minor pyrite, wolframite, and arsenopyrite (Unit 3a); McLean Brook North
85-BH-131	Silicified granite breccia with pyrite and arsenopyrite (Unit 3a); McLean Brook North
85-BH-132C	Quartz vein with very coarse wolframite (Unit 3a); McLean Brook North
85-BH-133B	Greisenized granite (Unit 3a); McLean Brook North
85-BH-285A	Fine-grained altered or greisenized biotite granite rubble cut by quartz-cassiterite veins (Unit 3b)
BHM-1	Quartzite containing pyrite and arsenopyrite cut by quartz vein containing beryl and molybdenite; Burnthill Tungsten, mine dump
ALD-3	Quartz-wolframite-fluorite-topaz vein containing abundant pyrite in phyllitic host; Adit level dump; Burnthill Tungsten, mine dump
MB-5, -6	Quartz-biotite veins in phyllite containing cassiterite, arsenopyrite, and minor chalcopyrite (Unit COs); Two and a Half Mile Brook
MB-7	Altered black slate cut by several narrow quartz veins containing cassiterite, wolframite, pyrite, arsenopyrite, and fluorite; Two and a Half Mile Brook
LHB-1	Silicified siltstone containing coarse fluorite, chalcopyrite, pyrite, and sphalerite; Lower Hayden Brook
85-BH-155B	Coarse biotite-rich border zone of quartz vein in altered coarse-grained porphyritic granite (Unit 2a); "Tin Hill"
TH-0	Sericitic greisen at "Tin Hill" (Unit 2b)
TH-1	Quartz, cassiterite, wolframite vein in greisenized granite (Unit 2b); "Tin Hill"
TH-3	Coarse greisen with large cassiterite crystals (Unit 2b); "Tin Hill"

TABLE 5

SAMPLE DESCRIPTIONS - DUNGARVON GRANITE
(Plate 87-55A; Tables 11 to 14)

86-BH-108	Brecciated hornfels with felsitic matrix (Unit COs)
86-BH-131B	Silicified vuggy granite breccia with high radiometric response (500-600 cps; Unit 2a); Harris Lake (U)
86-BH-149	Brecciated and silicified fine-grained equigranular granite (Unit 3c)
86-BH-189	Silicified breccia with fine-grained pyritized granite fragments and wolframite cluster; Harris Lake (A, B, C, D)
86-BH-213	Sparse quartz stockwork in fine-grained equigranular granite (Unit 3b)
86-BH-240	Coarse-grained biotite granite containing fractures filled with massive pyrite and minor chalcopyrite (Unit 2a); Dungarvon (vein 7)
86-BH-242D	Narrow feldspathic vein centred by quartz-filled fracture within coarse-grained miarolitic granite (Unit 2a); Dungarvon (vein 7)
86-BH-242E	Silicified breccia containing altered granite fragments and massive pyrite (Unit 2a); Dungarvon (vein 7)
86-BH-243	Coarse quartz and fluorite breccia (Unit 2a); Dungarvon (vein 7)
86-BH-245B	Silicified breccia containing pyritized granite fragments (Unit 2a)
86-BH-248	Quartz stockwork in medium-grained equigranular granite (Unit 3b)
86-BH-263	Biotite-rich miarolitic feldspathic granite boulder (Unit 2a)
86-BH-264B	Silicified breccia containing minor sulphides; Four Mile Brook
86-BH-285	Hornfelsic breccia (Unit OS_2)
86-BH-572B	Fine-grained equigranular biotite granite (Unit 3b), Youngs Dam (A, B)
PML-1	Quartz vein with large wolframite crystal (Unit Om); Peaked Mountain (A, B, C)
DC-1	Quartz vein with disseminated cassiterite (Unit 3b); Dungarvon (veins 2, 4, 6, 11, 14)

CLEVP	Fine-grained greisen with galena and sphalerite at Cleveland prospect (Unit 2a)
SO-18-1	Cassiterite-bearing quartz vein in brecciated and feldspathized granite (Unit 2a); Trench 18; Four Mile Brook (vein 1)
SO-19-1	Same in Trench 19; Four Mile Brook (vein 1)
DR004	Red miarolitic feldspathic vein (Unit 2a)

TABLE 6

SAMPLE DESCRIPTIONS
ROCKY BROOK, TROUT LAKE, AND SISTERS BROOK GRANITES
(Plates 87-55A, 87-57A; Tables 15 to 18)

86-BH-298	Greisenized medium-grained granite (Unit 3a, Plate 87-57A)
86-BH-299	Striped grey and pink hornfels cut by narrow quartz vein (Unit OS_2, Plate 87-57A)
86-BH-329	Coarse-grained greisen from trench 85-19 (Unit 3b, Plate 87-57A); Trout Lake pluton (east)
86-BH-369B	Medium-grained greisen on margin of leucogranitic dyke (Unit 4b, Plate 87-57A); Deadman Brook
86-BH-436	Quartz-filled vug in brecciated granite (Unit 3b, Plate 87-57A)
86-BH-439B	Narrow quartz veins containing pyrite and fluorite in medium-grained granite (Unit 2b, Plate 87-57A); Gilman Brook
86-BH-447	Red miarolitic feldspathic vein (Unit 3a, Plate 87-57A)
86-BH-610	Feldspathic vein with abundant pyrite and fluorite (Unit 3a, Plate 87-57A)
86-BH-615	Quartz-feldspar vein containing pyrite (Unit 3a, Plate 87-57A)
86-BH-647	Coarse quartz-fluorite breccia (Unit 3a, Plate 87-57A); Rocky Brook
TM-3	Quartz, arsenopyrite, pyrrhotite, pyrite, chlorite vein in phyllite host; Todd Mountain (Unit Os_1, Plate 87-57A)
86-BH-580B	Fine-grained equigranular biotite granite (Unit 3b, Plate 87-55A)
86-BH-580C	Fine-grained equigranular biotite granite (Unit 3b, Plate 87-55A)
86-BH-588	Medium-grained greisenized granite float (Unit 2b, Plate 87-55A)

TABLE 7

BURNTHILL GRANITE - MAJOR AND MINOR ELEMENTS

SAMPLE	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	MnO	TiO_2	P_2O_5	L.O.I.	SUM
85-BH-48	65.5	17.9	0.21	0.48	6.26	5.56	1.95	0.09	0.35	0.10	1.47	100.0
85-BH-129B	68.8	16.9	0.07	0.02	0.95	12.0	0.98	--	0.02	0.02	0.31	100.2
85-BH-129C	82.3	5.36	0.57	0.09	0.68	2.11	0.95	0.16	0.10	0.03	1.08	93.5
85-BH-131	81.0	10.0	0.05	0.19	0.26	3.33	2.46	--	0.14	0.04	1.93	99.5
85-BH-132C	76.5	0.12	0.35	0.04	0.04	0.03	2.04	0.92	0.05	0.02	0.62	80.8
85-BH-133B	77.3	10.4	0.02	0.24	0.10	3.77	4.19	--	0.16	0.04	2.39	98.7
85-BH-285A	81.8	8.87	0.09	0.10	0.40	3.65	2.52	0.08	0.09	0.06	1.54	99.3
BHM-1	79.5	3.36	0.95	0.29	0.04	0.59	5.25	0.16	1.21	0.06	1.93	93.4
ALD-3	61.7	14.9	1.32	0.74	<0.01	0.54	12.5	0.10	0.15	0.03	6.62	98.6
MB-5	62.1	6.69	1.09	0.19	0.05	0.68	13.7	--	0.03	0.02	14.7	99.3
MB-6	86.9	3.86	0.06	0.35	0.02	1.06	2.65	--	0.24	0.02	1.85	97.1
MB-7	58.7	15.0	1.94	3.00	0.21	5.74	7.60	0.22	1.35	0.15	3.39	97.5
LHB-1	35.5	10.1	8.23	0.79	0.65	0.39	19.0	4.54	1.16	0.11	6.39	86.9
85-BH-155B	55.9	13.1	0.27	1.40	0.07	5.44	18.6	0.62	0.97	0.27	2.39	99.3
TH-0	63.3	17.5	0.71	0.22	0.14	5.66	8.40	0.20	0.23	0.09	2.77	99.4
TH-1	43.5	22.8	0.18	0.53	0.12	7.50	4.52	0.22	0.14	0.03	3.70	83.4
TH-3	40.1	25.0	0.04	0.52	0.18	8.12	12.7	0.17	0.76	0.10	5.31	93.2

TABLE 8

BURNTHILL GRANITE - TRACE ELEMENTS

SAMPLE	Li	Be	Rb	Sr	Cs	Ba	B	S	Ge	As	Se	Sb	Y	Zr	Nb	Hf	Ta
85-BH-48	30	5	401	345	7	457	<10	<100	<10	<1	<3	0.8	74	170	34	6	4
85-BH-129B	<10	<5	934	97	16	361	10	<100	<10	11	<3	0.6	<10	<10	<10	<1	<1
85-BH-129C	<10	<5	205	14	<1	122	20	720	<10	1	<3	0.6	77	23	68	2	<1
85-BH-131	70	<5	476	22	10	122	20	660	<10	1800	<3	<0.2	60	77	17	4	4
85-BH-132C	10	<5	<10	<10	<1	127	20	480	<10	<1	<3	1.0	30	<10	377	<1	<1
85-BH-133B	110	5	586	99	13	117	20	120	<10	22	<3	0.9	63	100	35	6	5
85-BH-285A	30	5	598	<10	11	169	20	<100	<10	24	<3	0.2	17	56	69	3	6
BHM-1	70	1500	<10	39	12	124	20	13600	30	4300	3	<0.2	127	313	49	6	4
ALD-3	70	15	57	15	12	136	20	28800	40	2500	<3	<0.2	<10	<10	<10	<1	<1
MB-5	30	5	<10	87	3	108	<10	14000	30	150000	<3	79.0	<10	>10	19	<1	<1
MB-6	30	<5	169	<10	4	145	30	1100	<10	16000	<3	<0.2	<10	30	20	<1	<1
MB-7	280	90	1100	30	62	297	50	10600	<10	5900	<3	0.8	35	119	<10	4	<1
LHB-1	110	210	<10	54	7	221	<10	15700	<10	5	<3	<0.2	<10	361	51	7	2
85-BH-155B	960	5	1260	63	98	273	<10	<100	<10	22	<3	0.2	84	344	90	8	13
TH-0	130	10	848	66	30	427	20	<100	<10	6	<3	0.4	<10	155	<10	4	3
TH-1	160	15	947	25	55	298	30	240	<10	18	<3	0.4	<10	69	33	2	<1
TH-3	470	15	992	18	36	329	10	80	<10	<1	<3	<0.2	<10	226	18	5	3

TABLE 9

BURNTHILL GRANITE - TRACE ELEMENTS (CONTINUED)

SAMPLE	V	Cr	Mn	Co	Ni	Cu	Zn	Ga	Mo	Ag	Cd	In	Sn	W	Au*	Tl	Pb	Bi
85-BH-48	20	6	--	4	4	6.5	47.0	18	<2	<0.5	<1	<1	<10	<3	<1	4	22	<0.5
85-BH-129B	<10	<2	150	<1	4	31.0	10.0	14	95	2.0	<1	<1	<10	1700	3	3	150	125.
85-BH-129C	10	2	--	<1	5	26.0	14.0	14	61	<0.5	<1	<1	<10	1520	2	<1	42	74.5
85-BH-131	<10	<2	230	<1	5	160.	77.0	18	14	6.5	2	<1	22	59	8	2	280	33.5
85-BH-132C	<10	<2	--	<1	6	17.0	12.0	2	538	1.0	<1	1	<10	217	94	<1	4	182.
85-BH-133B	<10	<2	210	<1	8	130.	13.0	33	26	<0.5	<1	1	61	489	4	3	2	75.0
85-BH-285A	<10	<2	--	1	9	140.	95.0	15	19	1.5	<1	2	198	889	<1	3	66	15.6
BHM-1	50	72	--	10	24	360.	300.	7	7430	47.0	5	1	18	73	1900	7	3100	9940.
ALD-3	20	6	--	20	27	760.	650.	6	17	120.	6	1	34	518	25	4	560	1900.
MB-5	<10	<2	110	6	4	830.	38.0	4	6	4.0	<1	4	297	546	3	<1	32	202.
MB-6	38	48	78	6	13	980.	13.0	5	3	30.0	<1	8	152	92	4	1	10	30.8
MB-7	230	--	--	19	52	280.	70.0	19	<2	<0.5	<1	1	283	94	3	9	<2	23.5
LHB-1	30	54	--	22	15	3900.	48000.	12	<2	250.	460	39	145	27	2	3	7700	533.
85-BH-155B	70	4	--	15	14	4.0	260.	45	34	<0.5	<1	<1	40	582	<1	12	<2	1.0
TH-0	10	6	--	7	2	230.	69.0	43	11	1.0	<1	3	72	32	<1	7	10	19.0
TH-1	20	6	--	3	2	130.	830.	39	43	4.0	6	3	9400	43	<1	10	140	13.8
TH-3	30	6	--	2	1	100.	94.0	68	5	<0.5	<1	4	6090	566	<1	9	4	1.3

*ppb

TABLE 10

BURNTHILL GRANITE - RARE EARTH ELEMENTS

SAMPLE	La	Ce	Nd	Sm	Eu	Gd	Dy	Er	Lu	Th	U
85-BH-48	56	95	52.7	11.5	1.0	10.5	11.1	6.7	1.0	47	11.5
85-BH-129B	<2	4	2.5	0.7	0.5	<0.5	0.7	<0.5	<0.1	<1	8.1
85-BH-129C	17	46	26.4	7.9	0.3	6.5	6.9	3.6	0.7	17	12.6
85-BH-131	22	44	19.6	4.5	0.1	3.7	4.4	2.2	0.3	31	18.8
85-BH-132C	8	18	8.6	2.3	<0.1	2.1	5.9	6.8	3.4	5	6.2
85-BH-133B	34	78	35.6	7.6	0.1	4.2	2.3	0.8	0.2	44	5.1
85-BH-285A	15	32	13.6	2.9	0.2	2.4	2.6	1.3	0.2	20	12.2
BHM-1	71	175	84.7	20.2	0.9	10.0	4.2	1.3	0.2	22	5.2
ALD-3	5	10	5.1	0.9	0.3	0.5	0.6	<0.5	<0.1	2	0.6
MB-5	<2	1	0.9	<0.5	0.3	<0.5	<0.5	<0.5	<0.1	<1	0.5
MB-6	8	15	7.1	1.2	0.4	0.7	0.6	<0.5	<0.1	2	0.6
MB-7	25	49	25.7	4.7	1.0	3.8	2.8	1.3	0.3	8	2.8
LHB-1	53	112	55.5	10.1	2.4	9.3	9.1	5.2	0.7	17	3.9
85-BH-155B	77	165	75.4	15.0	0.4	11.9	7.2	2.4	0.3	34	28.9
TH-0	24	45	22.6	4.5	0.4	3.3	3.0	1.3	0.2	24	9.6
TH-1	36	72	35.1	6.4	0.6	4.3	2.1	0.6	0.1	23	1.8
TH-3	37	74	36.0	6.9	0.7	4.2	2.7	0.9	0.2	22	7.3

TABLE 11

DUNGARVON GRANITE - MAJOR AND MINOR ELEMENTS

SAMPLE	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	MnO	TiO_2	P_2O_5	L.O.I.	SUM
86-BH-108	74.9	11.7	0.26	1.43	0.12	2.79	4.71	--	0.71	0.08	3.16	100.0
86-BH-131B	91.1	2.06	1.38	0.05	0.06	0.31	1.52	--	0.05	0.03	1.23	97.8
86-BH-149	90.1	4.97	0.08	0.11	0.01	1.12	0.22	--	0.06	0.01	1.54	98.3
86-BH-189	92.2	3.57	0.11	0.09	0.07	0.54	0.96	--	0.06	0.02	1.93	99.6
86-BH-213	79.5	11.2	0.18	0.14	3.32	4.10	0.78	--	0.12	0.03	1.08	100.5
86-BH-240	58.3	16.0	0.30	0.46	4.05	4.83	9.41	--	0.31	0.09	4.93	98.8
86-BH-242D	69.7	16.0	1.15	0.07	3.79	8.30	0.11	--	0.17	0.03	0.54	100.0
86-BH-242E	88.8	4.94	0.09	0.16	0.14	1.69	1.97	--	0.09	0.03	2.47	100.4
86-BH-243	44.2	1.50	44.3	0.05	0.01	0.85	0.35	--	0.01	0.02	2.08	93.4
86-BH-245B	90.4	2.47	1.28	0.11	0.40	0.68	1.87	--	0.06	0.02	1.31	98.6
86-BH-248	80.8	9.88	0.10	0.08	1.86	2.38	2.14	0.21	0.08	0.02	1.47	99.1
86-BH-263	55.3	19.0	3.54	1.21	4.41	7.34	5.45	0.10	0.43	0.40	2.16	99.6
86-BH-264B	70.1	13.1	0.10	0.05	1.48	8.68	3.39	--	0.06	0.03	1.77	98.9
86-BH-285	94.8	2.09	0.13	0.29	0.58	0.57	0.64	--	0.10	0.03	0.77	100.0
86-BH-572B	75.6	12.7	0.48	0.15	3.31	5.33	0.94	--	0.14	0.05	0.77	99.5
PML-1	52.9	13.4	8.45	6.25	2.57	1.72	10.1	0.35	1.37	0.14	1.08	98.4
DC-1	81.6	6.17	0.10	0.11	2.66	0.55	0.32	--	0.07	0.02	0.54	92.2
CLEVP	67.4	13.2	0.07	0.46	0.13	4.84	6.25	0.43	0.17	0.03	3.85	96.9
SO-18-1	59.8	9.95	4.96	0.08	0.78	6.28	0.85	--	0.06	0.04	2.31	85.2
SO-19-1	52.2	8.96	0.49	0.15	2.18	3.57	0.77	--	0.09	0.03	0.54	69.0
DR004	61.6	19.2	2.20	0.15	6.15	5.98	2.11	0.09	0.18	0.05	1.08	98.9

TABLE 12

DUNGARVON GRANITE - TRACE ELEMENTS

SAMPLE	Li	Be	Rb	Sr	Cs	Ba	B	S	Ge	As	Se	Sb	Y	Zr	Nb	Hf	Ta
86-BH-108	150	5	251	63	14	416	10	<100	<10	2	<3	2.6	40	101	19	3	1
86-BH-131B	210	5	<10	27	5	185	20	2000	<10	190	13	10.0	<10	16	<10	<1	<1
86-BH-149	420	5	141	104	9	99	20	<100	<10	4	<3	0.8	17	16	22	2	3
86-BH-189	460	5	50	53	9	140	30	1960	<10	93	<3	2.9	13	<10	<10	<1	<1
86-BH-213	10	5	293	65	3	126	20	<100	10	<1	<3	0.3	31	74	29	5	7
86-BH-240	90	10	<10	93	8	380	<10	10000	<10	10	<3	0.3	<10	152	14	4	4
86-BH-242D	20	<5	633	89	10	617	20	<100	10	<1	<3	0.2	94	66	11	3	3
86-BH-242E	210	5	<10	53	11	135	20	4400	<10	17	<3	7.0	12	32	<10	2	2
86-BH-243	30	<5	50	55	2	60	<10	80	<10	14	<3	0.4	25	<10	20	<1	<1
86-BH-245B	210	<5	65	54	2	127	20	1500	<10	10	<3	0.3	<10	<10	24	<1	<1
86-BH-248	210	180	639	61	18	107	20	<100	<10	20	<3	<0.2	82	60	59	4	7
86-BH-263	610	5	1040	176	69	300	<10	<100	10	<1	<3	0.2	65	274	<10	8	7
86-BH-264B	70	25	707	53	14	423	20	1200	<10	11	<3	0.5	16	<10	<10	<1	1
86-BH-285	190	<5	76	53	3	122	20	<100	<10	3	<3	<0.2	<10	<10	<10	<1	<1
86-BH-572B	50	10	347	23	7	85	20	1100	<10	<1	<3	<0.2	78	73	29	4	7
PML-1	140	15	289	255	7	72	10	<100	10	4	<3	<0.2	<10	48	24	2	<1
DC-1	20	<5	<10	28	2	120	20	<100	<10	<1	<3	<0.2	<10	21	19	1	<1
CLEVP	100	70	534	<10	22	338	60	8500	20	150	3	0.5	<10	153	22	5	2
SO-18-1	10	40	<10	59	14	505	10	<100	20	9	<3	<0.2	<10	<10	13	<1	<1
SO-19-1	80	15	<10	50	8	245	20	<100	20	4	<3	0.2	<10	<10	108	2	1
DR004	10	5	422	420	6	202	20	480	20	22	<3	0.7	58	91	27	6	7

TABLE 13

DUNGARVON GRANITE - TRACE ELEMENTS (CONTINUED)

SAMPLE	V	Cr	Mn	Co	Ni	Cu	Zn	Ga	Mo	Ag	Cd	In	Sn	W	Au*	Tl	Pb	Bi
86-BH-108	90	58	370	7	21	27.0	55.0	19	29	<0.5	<1	<1	<10	5	<1	1	16	<0.5
86-BH-131B	20	4	34	<1	2	3.0	16.0	5	33	<0.5	<1	<1	<10	11	5	1	60	6.0
86-BH-149	20	4	150	<1	2	2.0	15.0	9	43	<0.5	<1	<1	<10	5	<1	<1	10	19.3
86-BH-189	<10	6	230	2	3	2.0	16.0	6	259	<0.5	<1	<1	<10	6	10	3	12	2.3
86-BH-213	<10	4	150	2	4	27.0	22.0	13	3	<0.5	<1	<1	<10	<3	1	2	16	1.6
86-BH-240	30	4	190	28	5	1200.	22.0	24	8	<0.5	<1	<1	<10	27	<1	3	16	4.8
86-BH-242D	<10	4	82	<1	2	5.0	17.0	27	<2	<0.5	<1	<1	<10	<3	1	3	12	2.8
86-BH-242E	120	4	44	<1	<1	13.0	10.0	11	3	<0.5	<1	<1	<10	7	1	2	8	1.0
86-BH-243	10	4	42	2	3	1.0	12.0	3	3	<0.5	<1	<1	368	<3	<1	<1	10	2.7
86-BH-245B	<10	4	220	2	2	5.5	36.0	6	8	<0.5	<1	<1	21	<3	<1	<1	10	6.1
86-BH-248	<10	<2	--	<1	<1	33.0	92.0	23	195	1.0	<1	2	39	460	<1	3	180	101.
86-BH-263	50	6	--	6	7	1.5	36.0	40	<2	<0.5	<1	<1	21	9	3	5	8	23.6
86-BH-264B	20	2	100	<1	<1	6.0	23.0	17	49	1.0	<1	<1	43	<3	6	7	90	15.0
86-BH-285	10	20	250	3	7	2.5	20.0	4	<2	0.5	<1	<1	<10	3	<1	<1	30	54.7
86-BH-572B	10	4	210	1	2	36.0	44.0	18	4	<0.5	<1	<1	18	4	<1	3	32	2.7
PML-1	280	--	--	35	60	26.0	100.	17	114	<0.5	<1	<1	12	42	2	4	2	3.5
DC-1	<10	4	84	<1	1	10.0	47.0	15	<2	<0.5	<1	<1	6850	8	<1	<1	16	1.1
CLEVP	40	4	--	3	3	1200.	3800.	23	378	49.0	20	15	97	10	12	4	4400	101.
SO-18-1	20	4	290	2	3	8.0	37.0	8	<2	<0.5	<1	<1	7300	6	<1	4	12	3.4
SO-19-1	20	4	430	2	3	6.5	44.0	14	<2	<0.5	<1	<1	12700	5	<1	2	12	1.7
DR004	30	6	--	4	5	18.0	23.0	32	2	5.0	<1	<1	12	10	<1	4	46	99.0

*ppb

TABLE 14

DUNGARVON GRANITE - RARE EARTH ELEMENTS

SAMPLE	La	Ce	Nd	Sm	Eu	Gd	Dy	Er	Lu	Th	U
86-BH-108	34	64	30.4	5.2	0.8	3.5	2.3	1.2	0.2	16	2.8
86-BH-131B	3	7	3.3	0.7	0.2	0.8	1.8	1.2	0.2	3	207.0
86-BH-149	2	7	3.2	1.0	<0.1	0.9	2.4	1.1	0.2	14	4.0
86-BH-189	5	16	4.7	0.8	0.1	0.6	1.4	0.8	<0.1	3	3.0
86-BH-213	8	23	9.4	3.0	<0.1	2.8	3.8	2.3	0.5	41	22.6
86-BH-240	22	46	19.6	3.6	0.4	2.9	2.8	1.5	0.3	30	8.6
86-BH-242D	10	20	15.7	4.1	0.2	4.7	5.9	3.9	0.7	17	8.6
86-BH-242E	5	10	4.4	1.4	0.3	2.0	5.4	4.7	0.7	12	9.3
86-BH-243	<2	2	1.2	0.7	<0.1	1.1	2.7	1.9	0.4	<1	1.0
86-BH-245B	7	6	5.2	0.9	<0.1	0.9	1.0	0.7	0.2	3	5.5
86-BH-248	16	39	19.6	5.3	<0.1	3.4	3.3	2.1	0.4	27	15.2
86-BH-263	17	22	22.9	8.3	0.5	10.0	8.9	4.5	0.7	61	13.8
86-BH-264B	4	7	4.7	0.8	<0.1	0.8	1.2	1.0	0.3	4	2.6
86-BH-285	2	4	1.7	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	1	1.4
86-BH-572B	20	46	22.7	4.5	<0.1	4.0	3.4	2.2	0.3	30	29.6
PML-1	5	12	11.0	3.5	1.3	4.0	4.7	2.8	0.4	<1	0.6
DC-1	5	6	4.6	0.9	0.2	1.0	1.8	0.9	0.2	3	2.4
CLEVP	16	32	13.4	2.7	0.3	1.8	1.9	1.4	0.4	37	8.4
SO-18-1	2	4	3.1	2.1	0.3	2.9	4.5	2.6	0.5	1	4.8
SO-19-1	3	10	3.6	0.7	<0.1	<0.5	1.1	0.5	0.1	14	4.2
DR004	20	57	23.0	6.0	0.2	5.3	7.5	5.0	0.9	49	36.1

TABLE 15

ROCKY BROOK, TROUT LAKE, AND SISTERS BROOK GRANITES - MAJOR AND MINOR ELEMENTS

SAMPLE	SiO_2	Al_2O_3	CaO	MgO	Na_2O	K_2O	Fe_2O_3	MnO	TiO_2	P_2O_5	L.O.I.	SUM
ROCKY BROOK:												
86-BH-298	59.1	13.7	9.13	4.26	1.79	2.85	6.63	0.13	0.82	0.12	1.54	100.2
86-BH-299	52.0	15.7	10.9	5.17	2.26	2.36	7.38	0.17	0.94	0.14	1.54	98.7
86-BH-610	61.4	15.6	1.22	0.37	2.11	8.90	7.41	0.33	0.13	0.07	2.54	100.2
86-BH-615	68.7	16.0	0.33	0.14	4.34	6.23	1.31	--	0.18	0.05	1.62	99.0
86-BH-647	15.5	0.62	65.3	0.07	<0.01	0.17	0.18	--	<0.01	0.02	1.62	83.5
TROUT LAKE:												
86-BH-329	78.1	12.0	0.48	0.15	0.19	3.83	3.10	0.22	0.11	0.03	1.93	100.3
86-BH-369B	77.9	13.2	0.16	0.16	1.00	4.22	1.98	0.07	0.06	0.07	1.77	100.7
86-BH-436	85.3	4.74	5.70	0.07	0.03	0.73	0.29	--	0.04	0.02	3.00	100.0
86-BH-439B	78.5	9.36	0.71	0.03	0.29	7.60	1.85	--	0.19	0.07	1.06	100.0
86-BH-447	60.1	20.2	0.13	0.06	4.57	8.80	3.16	0.11	0.07	0.10	1.62	99.1
TM-3	77.0	5.29	1.36	0.67	0.06	0.83	7.35	3.51	0.25	0.08	1.00	97.5
SISTERS BROOK:												
86-BH-580B	76.0	13.0	0.62	0.15	3.86	4.97	0.83	--	0.12	0.03	0.54	100.2
86-BH-580C	77.0	12.5	0.30	0.41	2.70	4.30	1.39	--	0.11	0.03	1.23	100.0
86-BH-588	78.5	9.47	0.50	0.67	0.13	4.88	3.46	0.25	0.38	0.13	1.23	99.7

TABLE 16

ROCKY BROOK, TROUT LAKE, AND SISTERS BROOK GRANITE - TRACE ELEMENTS

SAMPLE	Li	Be	Rb	Sr	Cs	Ba	B	S	Ge	As	Se	Sb	Y	Zr	Nb	Hf	Ta
ROCKY BROOK:																	
86-BH-298	100	10	295	344	11	282	<10	130	<10	3	<3	0.8	31	120	<10	3	2
86-BH-299	80	10	263	456	11	211	10	<100	<10	3	<3	0.4	<10	103	20	3	1
86-BH-610	40	25	712	85	13	517	<10	8200	<10	50	<3	<0.2	14	96	16	4	3
86-BH-615	70	5	505	73	29	267	20	1600	<10	49	<3	0.7	12	74	<10	4	4
86-BH-647	50	<5	<10	70	2	<10	<10	180	<10	14	<3	<0.2	25	<10	17	<1	<1
TROUT LAKE:																	
86-BH-329	240	5	716	43	48	112	40	<100	20	1	<3	<0.2	58	62	11	4	3
86-BH-369B	230	25	676	49	23	158	30	<100	10	7	<3	<0.2	24	19	28	3	11
86-BH-436	770	<5	107	67	8	36	20	<100	30	<1	<3	7.7	43	<10	25	<1	<1
86-BH-439B	30	5	554	116	7	977	20	3500	<10	2	<3	0.2	20	157	29	5	6
86-BH-447	170	5	1030	<10	26	83	20	<100	<10	14	<3	0.2	28	52	<10	4	12
TM-3	50	35	<10	24	41	1180	10	1700	<10	3300	<3	<0.2	<10	13	10	1	<1
SISTERS BROOK:																	
86-BH-580B	60	10	275	70	7	100	20	1609	<10	<1	<3	<0.2	112	71	24	5	8
86-BH-580C	40	5	332	98	11	130	20	<100	<10	2	<3	0.2	39	72	13	4	6
86-BH-588	40	<5	478	117	13	413	20	<100	<10	25	<3	0.2	19	167	14	4	2

TABLE 17

ROCKY BROOK, TROUT LAKE, AND SISTERS BROOK GRANITES - TRACE ELEMENTS (CONTINUED)

SAMPLE	V	Cr	Mn	Co	Ni	Cu	Zn	Ga	Mo	Ag	Cd	In	Sn	W	Au*	Tl	Pb	Bi
ROCKY BROOK:																		
86-BH-298	130	--	--	18	77	44.0	90.0	19	6	0.5	<1	<1	20	10	<1	3	<2	185.
86-BH-299	170	--	--	20	91	50.0	100.	20	4	<0.5	<1	1	38	11	<1	2	<2	6.5
86-BH-610	20	4	--	7	1	9.5	220.	26	<2	1.0	<1	2	39	<3	2	6	38	8.3
86-BH-615	10	4	110	<1	2	2.0	17.0	22	20	0.5	<1	<1	29	<3	<1	4	14	2.5
86-BH-647	<10	4	12	2	2	<0.5	8.0	3	14	<0.5	<1	<1	<10	<3	<1	<1	<2	0.6
TROUT LAKE:																		
86-BH-329	<10	4	--	1	2	90.0	290.	29	11	0.5	<1	2	384	20	<1	4	<2	4.8
86-BH-369B	<10	4	--	1	3	3.5	34.0	33	22	<0.5	<1	1	38	71	<1	3	4	343.
86-BH-436	<10	4	110	1	3	2.0	21.0	11	9	<0.5	<1	<1	<10	<3	<1	<1	4	2.6
86-BH-439B	<10	2	100	1	1	2.5	42.0	9	14	<0.5	<1	<1	<10	<3	<1	6	40	8.0
86-BH-447	<10	2	--	2	<1	1.5	26.0	36	33	<0.5	<1	<1	18	8	<1	6	22	<0.5
TM-3	40	24	--	102	75	200.	42.0	15	4	<0.5	<1	1	1580	9	5	3	<2	8.6
SISTERS BROOK:																		
86-BH-580B	<10	4	210	2	2	31.0	28.0	18	<2	<0.5	<1	<1	<10	13	<1	2	22	2.3
86-BH-580C	<10	4	360	3	3	77.0	71.0	17	5	<0.5	<1	<1	26	5	<1	2	30	4.1
86-BH-588	20	8	--	5	3	25.0	86.0	15	8	3.0	<1	<1	41	5	<1	4	110	2.5

*ppb

TABLE 18

ROCKY BROOK, TROUT LAKE, AND SISTERS BROOK GRANITES - RARE EARTH ELEMENTS

SAMPLE	La	Ce	Nd	Sm	Eu	Gd	Dy	Er	Lu	Th	U
ROCKY BROOK:											
86-BH-298	26	54	26.5	5.5	0.9	4.3	4.3	2.4	0.4	11	2.7
86-BH-299	27	57	30.7	6.2	1.4	5.9	5.2	3.0	0.4	11	2.8
86-BH-610	18	41	19.9	4.6	0.4	4.3	3.0	1.6	0.3	29	10.0
86-BH-615	7	14	9.0	2.0	<0.1	1.7	2.5	1.7	0.3	26	16.0
86-BH-647	3	3	2.4	1.1	0.1	1.5	2.9	2.4	0.4	<1	0.8
TROUT LAKE:											
86-BH-329	19	43	19.5	4.6	<0.1	2.4	1.6	0.9	0.2	22	5.2
86-BH-369B	5	10	5.8	1.7	<0.1	1.1	1.1	<0.5	0.2	12	11.0
86-BH-436	5	10	5.0	1.1	<0.1	1.2	1.3	0.9	<0.1	6	1.5
86-BH-439B	22	45	21.7	4.3	0.4	3.2	4.1	2.8	0.5	22	7.3
86-BH-447	8	19	8.9	2.6	<0.1	1.6	2.3	1.3	0.3	17	22.9
TM-3	21	74	18.1	3.3	1.0	2.8	3.0	1.6	0.2	5	1.3
SISTERS BROOK:											
86-BH-580B	10	28	15.4	4.1	0.1	3.1	3.0	1.6	0.3	34	26.2
86-BH-580C	9	24	13.4	3.2	0.2	2.5	3.3	1.9	0.3	38	15.5
86-BH-588	21	45	21.2	4.1	0.5	4.2	4.7	2.6	0.4	23	5.4